June 16, 1964 T. RALTON 3,137,157

KEY HOLDER

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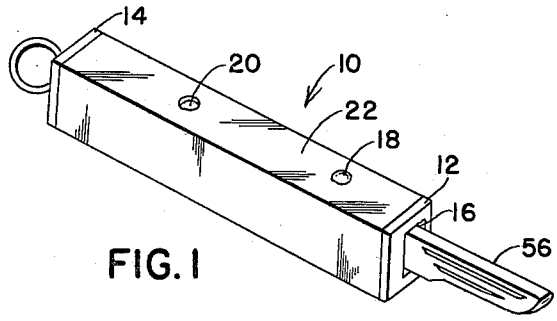


FIG. 1

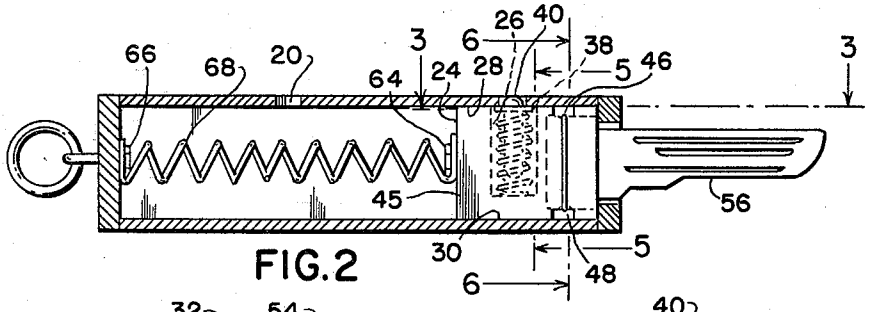


FIG. 2

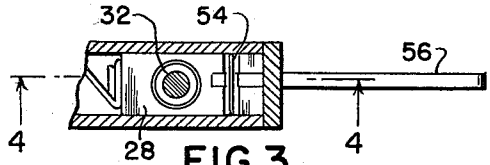


FIG. 3

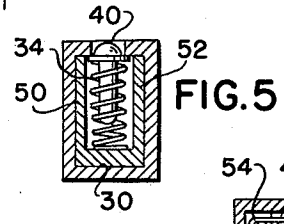


FIG. 5

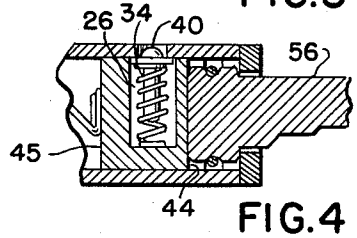


FIG. 4

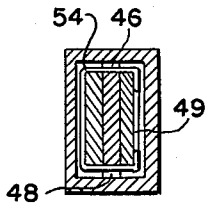


FIG. 6

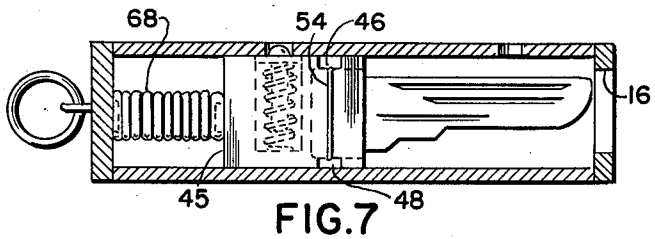


FIG. 7

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KEY HOLDER

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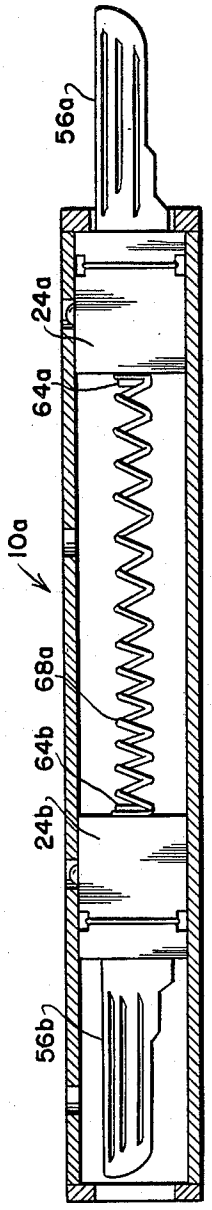


FIG. 9

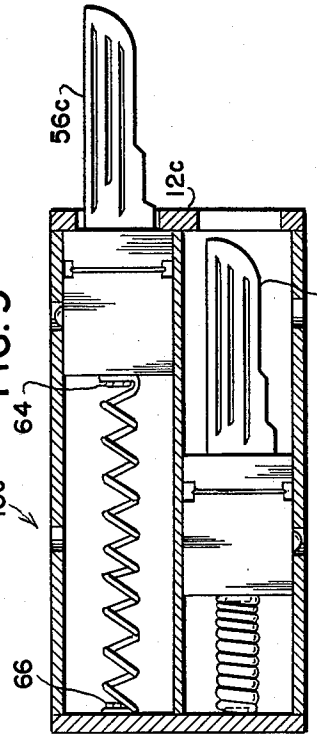


FIG. 10

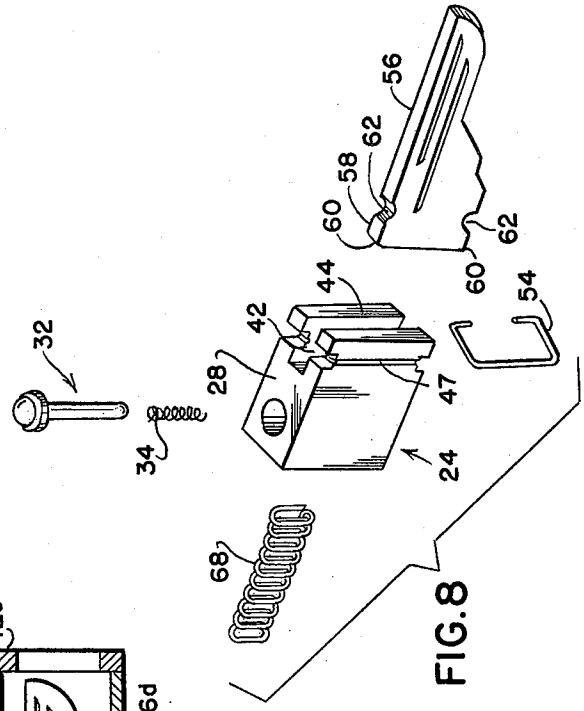


FIG. 8

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3,137,157

KEY HOLDER

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2 Claims. (Cl. 70—456)

The present invention relates to a combination holder and locking handle for keys.

An object of the present invention is to provide a convenient holder for carrying an ordinary, frequently used key.

Another object of the present invention is to provide a simple, foolproof mechanism for removing the key from inside its holder and locking it to the holder in a position which renders the key most easily insertable in a lock.

Another object of the invention is to facilitate the insertion and retention of a key into the key holder of this invention and eliminating the necessity for complete or partial disassembly of the device.

Another object of the invention is to insure positive key retention in the holder by providing automatic key retaining lock means disposed within the casing and responsive to the introduction of the key element to retain the same in the holder.

In brief, this invention is directed to a combination key holder and handle in which a key may be selectively carried in exposed or concealed position and which by actuation of suitable latch means will automatically respond to move the key from one position to another. The invention further contemplates the inclusion of key securing means whereby a key element may be inserted into the holder and retained therein without the use of tools and without the necessity of disassembling the device to place the key therein.

In the accompanying drawing:

FIGURE 1 is a pictorial view of the key holder herein claimed.

FIGURE 2 is a side sectional view of the key holder of FIGURE 1 showing the key in the extended position.

FIGURE 3 is a top sectional view of the key holder as taken across line 3—3 of FIGURE 2.

FIGURE 4 is a sectional view of the key holder as taken across line 4—4 of FIGURE 3.

FIGURE 5 is a sectional view of the key holder as taken across line 5—5 of FIGURE 2.

FIGURE 6 is a sectional view of the key holder as taken across line 6—6 of FIGURE 2.

FIGURE 7 is a side sectional view of the key holder of FIGURE 1 showing the key in the retracted position.

FIGURE 8 is an exploded view of the sliding member and key.

FIGURE 9 is a side sectional view of the first modified embodiment of the key holder herein claimed.

FIGURE 10 is a side sectional view of the second modified embodiment of the key holder herein claimed.

Referring now to the drawing, it will be seen that the invention comprises an outside casing **10** which is a rectangular parallelepiped having separate front and rear end plates **12** and **14**, respectively. Front end plate **12** has a rectangular slot **16** for passage of a key. A forward hole **18** and a rearward hole **20** are in the uppermost narrow side **22** of casing **10** and are of the same size. A sliding member **24** has a rectangular cross-section and fits loosely inside casing **10**. Slide **24** has a hole **26** extending from the uppermost face **28** of said slide part way down toward the lowermost face **30** of said slide. A pin **32** having a spring **34** coiled around its shank **36** is placed in hole **26**. The head of pin **32** comprises a disk portion **38** having a diameter greater than that of holes **18** and **20** and a slightly flattened hemispherical portion **40** having a diameter slightly less than that of holes **18** and **20**.

A slot **42** extends from upper face **28** to lower face **30** and from front face **44** part way back toward hole **26** and rear face **45** of slide **24**. Two transverse slots **46**, **48** in upper and lower slide faces **28**, **30** respectively are perpendicular to the planes of slot **42** and side faces **50**, **52** of slide **24**, said slots **46**, **48** extending all the way across slide **24** and disposed directly above and below each other. Two vertical slots **47**, **49** in side faces **50**, **52** respectively of slide **24** are perpendicular to upper face **28** and lower face **30** and extend from upper transverse slot **46** to lower transverse slot **48**. A U-shaped spring **54**, having short inwardly bent ends, clips around slide **24** in slots **46**, **47**, **48** and **49**.

The key **56** has a flat, rectangular head **58**, the key being of substantially the same thickness throughout. Head **58** has two rounded corners **60** and two notches or slots **62**, said slots **62** being disposed directly above and below each other.

A rectangular boss **64** on rear face **45** of slide **24** and a similar boss **66** on the inside face of rear end plate **14** are mounts for the ends of coil spring **68** which has a rectangular cross-section corresponding in proportion to that of housing **10**.

When fully assembled and in retracted position, key **56** fits into slot **42** such that spring **54** snaps into notches **62**, thereby holding key **56** firmly with respect to slide **24**. Hemispherical portion **40** of pin **32** fits into rear hole **20**, locking slide **24** in its rearmost position. In this position key **56** is fully retracted within casing **10**.

In order to make use of key **56**, pin **32** is depressed by finger pressure such that hemispherical portion **40** is below side **22** of casing **10**. This permits pressure of spring **68** to push slide **24** forward until pin **32** is directly under forward hole **18**, whereupon spring **34** pushes pin **32** upward until disk **38** bears against the inner portion of side **22**, preventing further upward movement of pin **32**. Hemispherical portion **40** is now in hole **18** and locks slide **24** against any additional movement, particularly against pressure of spirng **60**. In this forward position key **56** extends through rectangular slot **16** and out of casing **10** far enough for insertion of the key in the lock. Casing **10** is now a convenient handle for key **56**.

To retract key **56**, pin **32** is pushed down so that hemispherical portion **40** is clear of side **22** and key **56** is pushed back into casing **10** until the forward end of key **56** just enters casing **10**, in which pin **32** is directly below hole **20**; pressure of spring **34** pushes pin **32** upward into hole **20** and thereby locks slide **24** and key **56** in the retracted position.

There are many possible modifications utilizing the principles of the invention above described. While two modified embodiments will be hereinbelow described, further arrangements and modified embodiments will be obvious to a person familiar with the art.

The first modified embodiment comprises two keys **56*a***, **56*b*** moving colinearly with slides **24*a***, **24*b*** respectively in a single casing **10*a***. Keys **56*a***, **56*b*** are pushed in opposite directions by a single coil spring **68*a*** connected to bosses **64*a***, **64*b*** of slides **24*a***, **24*b***, respectively. Means for locking either key **56*a***, **56*b*** in either retracted or extended position are completely analogous to such means above described in the unmodified embodiment; all other mechanical features of the first modified version are likewise identical to those of the unmodified version.

The second modified embodiment comprises two keys **56*c***, **56*d*** moving parallel to and directly above and below each other, both of said keys **56*c***, **56*d*** being in the same casing **10*c*** and being extensible from the same end **12*c*** of said casing **10*c***. All other mechanical features of the second modified version are identical to those of the unmodified version.

What is claimed is:

1. In a key holder the combination comprising:

(*a*) a substantially tubular casing;

(*b*) a slide disposed within said casing and movable between first and second positions therewithin;

(*c*) latch means carried by said slide and cooperable with means on said casing to selectively secure said slide in said first or second position;

(*d*) spring means interconnecting one end of said casing and said slide for urging said slide into one of said positions;

(*e*) means defining a first recess extending into said slide at one end thereof;

(*f*) means defining a second recess extending around selected portions of said slide, said second recess communicating with said first recess;

(*g*) key means including a shank portion and a slide engaging portion, said slide engaging portion adapted for disposition within said first recess in said slide and including lock actuating means and lock receiving means; and

(*h*) lock means disposed within said second recess and extending therethrough into said first recess and cooperating with said lock actuating means and said lock receiving means in said slide engaging portion of said key whereby said key may be inserted and retained in said slide when said slide is disposed wholly within said casing.

2. In a key holder the combination comprising::

(*a*) a substantially tubular casing;

(*b*) first and second slides disposed within said casing, each of which is selectively movable between selected positions therewithin;

(*c*) latch means carried by each of said slides and cooperable with means on said casing to selectively secure each of said slides in a selected position relative to said casing and said other slide;

(*d*) spring means interconnecting said slides;

(*e*) each of said slides including means defining a first recess extending into each of said slides at one end thereof;

(*f*) each of said slides further including means defining a second recess extending around selected portions of each of said slides, said second recess communicating with said first recess;

(*g*) first and second key means each including a shank portion and a slide engaging portion, one of said slide engaging portions adapted for disposition within each of said first recesses in each of said slides and each of said slide engaging portions including lock actuating means and lock receiving means; and

(*h*) lock means disposed within said second recess of each of said slides and extending therethrough into said first recess and cooperating with said lock actuating and said lock receiving means in said slide engaging portion of each of said keys whereby said keys may be inserted and retained in each of said slides when said slides are disposed wholly within said casing.

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