Feb. 21, 1933. H. H. MURRAY 1,898,202

KEY HOLDER

Filed Feb. 25, 1931

Fig. 1.

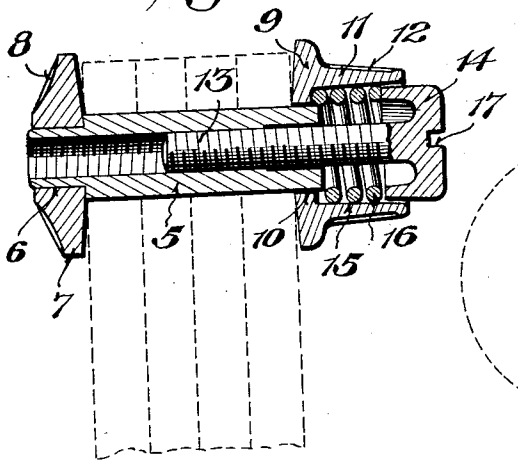


Fig. 2.

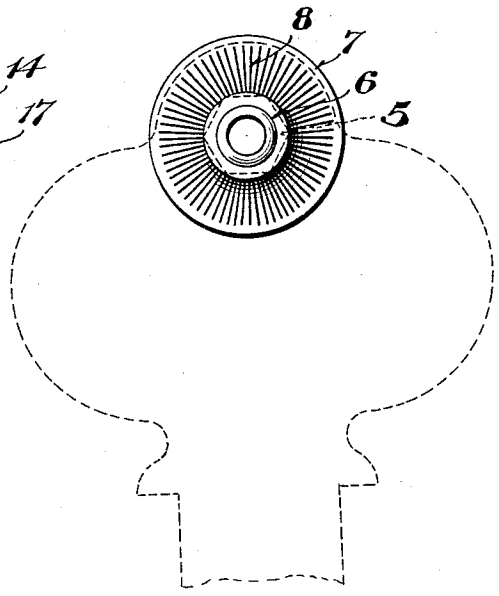


Fig. 3.

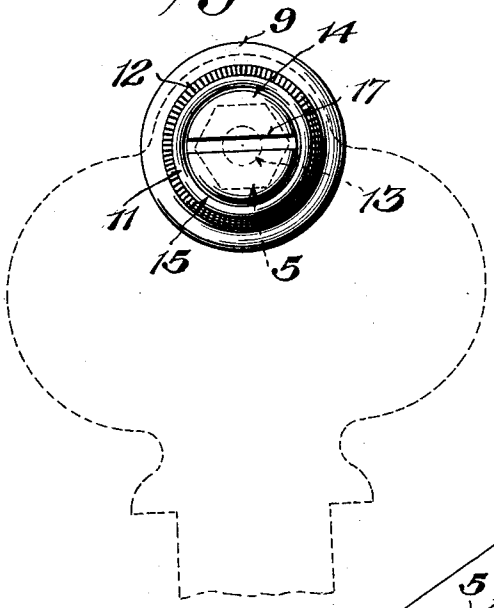
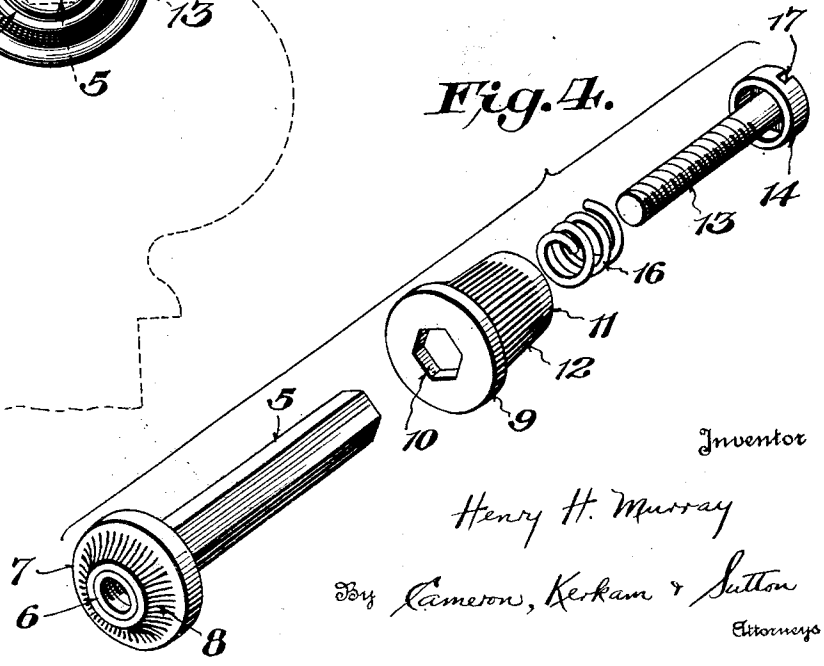


Fig. 4.



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UNITED STATES PATENT OFFICE

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KEY HOLDER

Application filed February 25, 1931. Serial No. 518,183.

This invention relates to key holders and more particularly to devices of this character employing a bar upon which a plurality of keys may be mounted in a compact and substantially rigid assembly.

One of the objects of the invention is to provide a novel key holder whereby a plurality of keys may be mounted and held in a compact mass or bunch for easy carrying, each key at the same time being readily separable from the rest when its usage is required.

Another object is to provide a key holder of the bar type embodying novel means for locking the key and bar assembly against accidental disengagement.

A further object is to provide a key bar on which a plurality of keys may be mounted in a compact mass between a pair of adjustably spaced end pieces or heads, and which embodies novel means for locking said heads against accidental separation.

Still another object is to provide a key holder of the bar type on which a plurality of keys may be resiliently maintained in close juxtaposition between a pair of adjustably spaced heads, wherein the means providing the resilient pressure for holding the keys together also serves as a locking means to prevent accidental disengagement of the assembly.

A still further object is to provide a novel self-locking keybar which is simple and rugged in structure, inexpensive of manufacture and efficient in operation for the purpose intended.

These and other objects will appear more fully from a consideration of the detailed description of the invention which follows. Although only one embodiment of the invention has been described and illustrated in the accompanying drawing, it is to be expressly understood that this drawing is for the purpose of illustration only and is not to be construed as a limitation of the scope of the invention, reference being had for this purpose to the appended claims.

In the drawing:

Fig. 1 is a sectional side view of one embodiment of the invention in assembled form; Figs. 2 and 3 are end views of Fig. 1; and Fig. 4 is a drawn out perspective view of the assembly shown in Fig. 1.

Referring now to the drawing, wherein like reference characters indicate like parts throughout the several views, the embodiment of the invention disclosed therein comprises a keybar formed of a body member or bar having a pair of end pieces or heads, one of which is movable relative to the other, means for holding said movable head on the bar, and means for locking the assembly against accidental disengagement. As shown, the key-mounting portion of the key holder is formed by a non-cylindrical, internally threaded tube or bar 5 one end of which is provided with a cylindrical portion 6 of reduced diameter, on which is forced an enlarged end piece or head 7. In the embodiment illustrated, bar 5 is hexagonal in cross-section but it will be understood that any non-cylindrical shape is contemplated within the scope of the invention. The outer face of head 7 is substantially frusto-conical in form and is knurled as at 8 to provide a suitable finger grip whereby assembly of the key holder may be facilitated. It will also be understood that the driving fit between head 7 and cylindrical portion 6 of bar 5 is such that said head is substantially integral with said bar, and that, if desired, these elements may be made in one piece.

Bar 5 is also provided with a second end piece or head 9 which is freely slidable upon bar 5, its bore 10 having the same non-cylindrical shape as the surface of bar 5. Head 9 is provided with an outwardly projecting boss 11, the diameter of which is less than that of the outside diameter of head 9 and the surface of which it suitably knurled as at 12 to form a finger grip.

Suitable means are provided for maintaining slidable head 9 on bar 5 and for resiliently urging it toward fixed head 7 in order to maintain the keys mounted therebetween in a substantially rigid and compact mass. As shown, a screw 13 having an enlarged, recessed head 14 is adapted to pass through the bore 10 and boss 11 of the head 9 and to engage the threads formed on the interior

of bar 5. Housed within a recess 15, formed within boss 11 of slidable head 9, is a coil spring 16 which is interposed between the base of recess 15 and the anular face of head 14 of screw 13. Spring 16 is coiled in the opposite direction to the pitch of the threads of screw 13, and the ends of said spring are cut squarely off leaving sharp edges which engage, respectively, the base of recess 15 and the face of screw head 14, in order to provide a locking action later to be described.

Since the device embodying the present invention is adapted for continuous use and is habitually carried in the pockets of one's clothing, it is desirable that it be so constructed that no special tools are required for its assembly and disassembly. Head 14 of screw 13 is therefore provided with a transverse slot 17 the width of which is made equal to that of a coin, such as a ten cent piece, so that the latter may be used as a screw driver. It is also possible to thread and unthread the screw 13 by using the finger nail as a screw driver.

Another detail of construction which renders the present invention more efficient for its purpose and minimizes any tendency for bar 5 and screw 13 to unthread, is the provision of convexly chamfered faces on heads 7 and 9. This construction reduces the frictional contact between the sides of the keys and the faces of these heads when the keys are rotated during usage.

The assembly of the device is as follows: With the parts entirely separated each from the other, the keys which are to be carried on the key holder are placed upon bar 5, said bar passing through the holes usually provided in the crowns of the keys. Slidable head 9 is then fitted onto bar 5 and moved over to the left, as viewed in Fig. 1, until it bears against the keys. Spring 16 is then placed in recess 15, and screw 13 is passed through the center of said spring and recess, and threaded into the interior of bar 5 a sufficient distance so that the keys are tightly but resiliently gripped between heads 7 and 9. The keys are then held in a compact and comparatively rigid manner, well adapted for carrying in the pocket.

When it is desired to use a particular key, said key can be readily rotated about bar 5 independently of the other keys and inserted in the lock, the remaining bunch of keys affording a desirable handle or lever for turning the key in the lock. Should it be desired to disassemble the keybar in order to add a key or remove one, screw 13 is first removed and then head 9 and spring 16 are slid off the bar to the right as a unit.

The novel construction and arrangement of slidable head 9 with its recess 15 and spring 16, and head 14 of screw 13 not only provides means for holding the keys in a compact mass under resilient pressure, but also affords a novel locking device to prevent accidental unthreading of the assembly. As mentioned above, coil spring 16 is coiled in the opposite direction to the pitch of the threads of screw 13, and the ends of said spring are cut squarely across thereby providing sharp edges engaging the base of recess 15 and the annular face of screw head 14. With this construction, should there be any tendency for screw 13 to back out, the sharp edge of the right-hand end of spring 16 would tend to cut into the annular face of screw head 14, and since the sharp edge of the lefthand end of said spring would similarly engage the base of recess 15, any further tendency of screw 13 to rotate would tend to uncoil and expand spring 16 against the inside of recess 15 of slidable head 9 and thereby, since head 9 is non-rotatable on bar 5, apply a braking action resisting any further rotation of said screw. With this novel construction there is no need for providing any other locking device of the usual character for preventing accidental unthreading of the members.

There is thus provided by the present invention a simple and inexpensive key holder of the bar type which is adapted for carrying a plurality of keys in a compact and substantially rigid bunch, each key being readily separable from the remainder of the bunch for individual usage. The slidable head construction allows for a maximum adjustability of the capacity of the key holder, and accidental disengagement of the assembly is prevented by the novel resilient locking means provided. The resilient locking means also performs the function of providing frictional resistance to rotation of the keys about the bar by resiliently urging the slidable head toward the fixed head, the purpose being to hold the keys in a folded position while in the pocket but to permit them to be easily splayed open for use. Assembly and disassembly of the keybar has been made extremely simple by the provision of knurled finger grips on the heads, and a slot of the width of a coin in the head of the screw member.

It will be obvious that the invention is not limited to the form shown in the drawing, but is capable of a variety of mechanical embodiments. For example, although the shape of bar 5 is shown as hexagonal, it will be understood that any desirable non-cylindrical form may be used. Likewise, fixed head 7 may be made integral with bar 5 instead of fixedly secured thereto as in the form shown. Furthermore, any suitable finger grip may be substituted for the knurling of the head as disclosed, and the slot in the head of the screw member may be made of any desired width, not necessarily equal to that of a ten cent piece. It is also contem-

plated that the heads may be made in any desired decorative shape instead of the circular form shown. Various other changes, which will now appear to those skilled in the art, may be made in the form, details of construction and arrangement of the parts without departing from the spirit of the invention, and reference is therefore to be had to the appended claims for a definition of the limits of the invention.

What is claimed is:

1. A key holder comprising a bar on which the keys are mounted, a head fixedly secured to said bar adjacent one end thereof, a second head slidably mounted on said bar, a screw passing freely through said slidable head and threaded into said bar, and a coil spring interposed between said slidable head and the head of said screw.

2. A key holder comprising a bar on which the keys are mounted, a head fixedly secured to said bar adjacent one end thereof, a second head slidably mounted on said bar, a screw passing freely through said slidable head and threaded into said bar, and a coil spring interposed between said slidable head and the head of said screw, said spring being coiled oppositely to the pitch of the threads of said screw.

3. A key holder comprising a bar on which the keys are to be mounted, a head fixedly secured to said bar adjacent one end thereof, a second head slidably and non-rotatably mounted on said bar, a recess formed within said slidable head, a screw passing freely through the recess in said slidable head and threaded into said bar, and a coil spring interposed between the head of said screw and the base of said recess, said spring being housed within said recess.

4. A key holder comprising a bar on which the keys are mounted, a head fixedly secured to said bar adjacent one end thereof, a second head slidably and non-rotatably mounted on said bar, a recess formed within said slidable head, a screw passing freely through the recess in said slidable head and threaded into said bar, and a coil spring interposed between the head of said screw and the base of said recess, said spring being housed within said recess and coiled oppositely to the pitch of the threads of said screw.

5. A key holder comprising a bar on which the keys are mounted, a head fixedly secured to said bar adjacent one end thereof, a second head slidably mounted on said bar, a screw passing through said slidable head and threaded into said bar, and locking means comprising a coiled resilient member sharpened at both ends interposed between the head of said screw and said slidable head for preventing accidental unthreading of the screw and bar.

6. A key holder comprising a bar on which the keys are mounted, a head fixedly secured to said bar adjacent one end thereof, a second head slidably mounted on said bar, a screw passing through said slidable head and threaded into said bar for holding said slidable head upon the bar, and means for resiliently opposing accidental unthreading of said screw and bar.

7. A key holder comprising a bar in which the keys are to be mounted, a pair of key retaining heads mounted on said bar one adjacent each end thereof, said heads being non-rotatable, but longitudinally movable, relative to one another, a screw passing freely through one of said heads and threaded into said bar, and means cooperating with said screw and one of said heads for both resiliently urging said last named head toward the other to grip the keys therebetween and opposing acidental unthreading of said screw and bar.

8. A key holder comprising a bar on which the keys are to be mounted, a key retaining head fixed to one end of said bar, a second head slidably mounted on said bar and adapted to be removed when keys are placed thereon, said heads being non-rotatable relative to one another, a recess formed within said slidable head the diameter of said recess being greater than the outside diameter of said bar, a screw passing freely through said recess and threaded into said bar, and a coil spring surrounding said screw, housed in said recess and abutting the base thereof and the head of said screw, the inside diameter of said spring being greater than the outside diameter of said bar and the coil of said spring being opposite to the pitch of the threads of said screw, whereby said spring both resiliently urges said slidable head toward the other head and opposes accidental unthreading of said screw and bar.

9. A key holder comprising a bar on which the keys are to be mounted, a key retaining head fixed to one end of said bar, a second head slidably mounted on said bar and adapted to be removed when keys are placed thereon, said heads being non-rotatable relative to one another, a recess formed within said slidable head, a screw passing freely through said recess and having threaded engagement with said bar, and a coiled resilient member housed in said recess having its ends in engagement with the base of said recess and the head of said screw, respectively, said member being coiled oppositely to the pitch of the threads of said screw, whereby said movable head is resiliently urged toward the other head and whereby any tendency for said screw to accidentally unthread from said bar expands said coiled resilient member within said recess and opposes said unthreading.

In testimony whereof I have signed this specification.

HENRY H. MURRAY.