

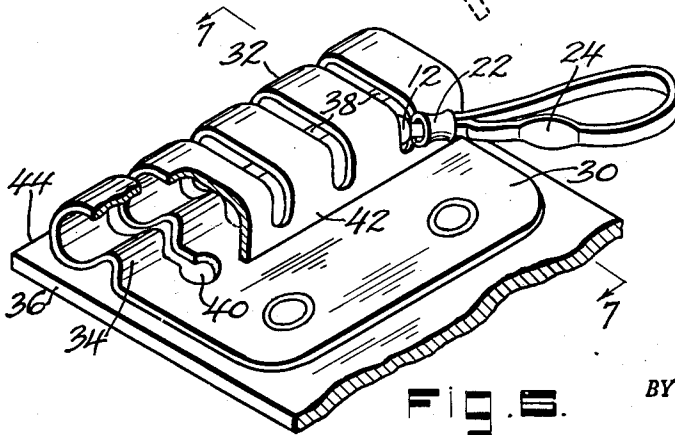
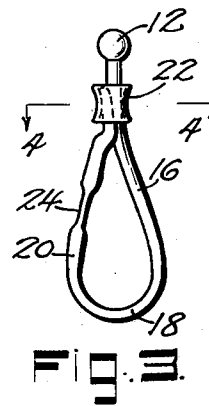
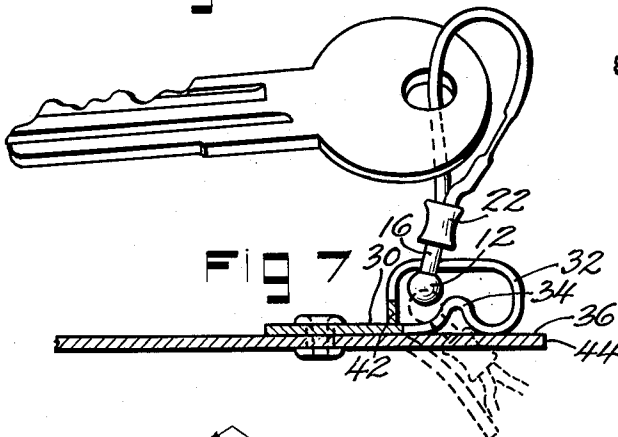
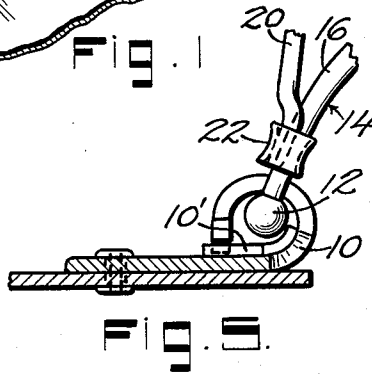
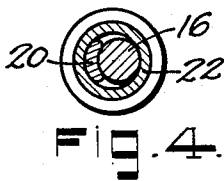
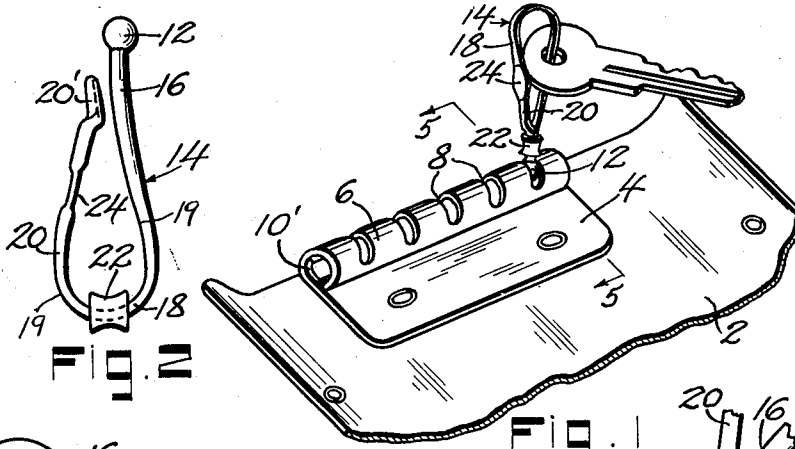
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KEY CONTAINER HOLDER PLATE AND RETAINING LOOP

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KEY CONTAINER HOLDER PLATE AND
RETAINING LOOP

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1 Claim. (Cl. 70—456)

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This invention relates to key containers of the type wherein a series of key retaining loops are supported in spaced relation by means of a holder plate carried by the cover of the container. The invention is directed particularly to constructions whereby the loss of keys and loops from the container is precluded.

Most key containers of the type to which the present invention is directed have a holder plate formed with a cylindrical barrel portion provided with slots through which the key retaining loops extend. Each slot is formed with an enlarged end and each key retaining loop is provided with a projection or head designed to pass through the enlarged end of a slot and into position in which the loop is pivotally supported by the barrel. The loop is generally formed with a free end portion which is directed towards an adjacent portion of the loop to form a restricted passage to preclude accidental passage of a key from the bight of the loop but the free end is resiliently movable to permit keys to be forced past the free end and into and out of retaining engagement with the loop.

When using such key retainers there is always danger of loss of both the key and the loop by which it is carried if the loop should slip into position to allow the head thereof to pass through the enlarged end of the slot in the cylindrical barrel of the holder plate. Moreover, the key may be lost from its retaining loop since normal contact between the free end of the loop and the adjacent portion thereof is usually a simple flat contact and no means are provided for precluding accidental separation.

In accordance with the present invention these objections to constructions of the prior art are overcome by providing a novel type of barrel portion on the holder plate and by the use of a novel type of key retaining loop. In the preferred form of the invention herein shown and described the holder plate may be formed with a barrel of substantially oval cross section while the plate forming the bottom closure thereof is provided with an inwardly extending ridge constituting a restriction within the barrel past which the loop head must be manipulated in attaching or removing it from the plate. The loop itself is formed to secure retention of the key preferably by forming the free end thereof in arcuate cross section so as to snugly embrace the circular body of the adjacent portion of the loop. In addition to such circular contact of the free end the loop is preferably provided with a locking element which is movable to engage the free end there-

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of and to hold it positively in a closed, key retaining position. The locking element further serves to prevent accidental separation of the loop from the barrel of the holder plate. Another feature of the invention is the formation of the loop from round wire stock which is flattened transversely of the plane of the loop at the return bend or bight thereof to provide improved resiliency.

One of the objects of the present invention is to provide a novel type of key retaining loop for use in a key container.

Another object of the invention is to provide a key container with means for preventing accidental release of key retaining loops from a holder plate carried by the container.

A particular object of the present invention is to provide a key container with a holder plate and key retaining loops together with locking elements cooperating with the loops and plate to prevent the loss of keys from the container.

These and other objects and features of the invention will appear from the following description thereof in which reference is made to the figures of the accompanying drawing.

In the drawing:

Fig. 1 is a perspective of a portion of a typical key container embodying the present invention;

Fig. 2 is a side elevation of the loop shown in Fig. 1 with the locking element in idle position;

Fig. 3 is a view similar to Fig. 2 showing the locking element in key retaining position;

Fig. 4 is a cross sectional view taken on the line 4—4 of Fig. 3;

Fig. 5 is a vertical sectional view taken on the line 5—5 of Fig. 1;

Fig. 6 is a perspective view illustrating a preferred form of holder plate embodying the present invention with parts broken away, and

Fig. 7 is a vertical sectional view of the construction shown in Fig. 6 taken on the line 7—7.

In that form of the invention illustrated in Figs. 1 to 5, the key container is provided with a cover 2 which has a holder plate 4 secured thereto adjacent one edge of the cover. The holder plate is provided with an inwardly turned or rolled portion forming the barrel 6 in which slots 8 are formed. Each slot is provided at one end with an enlarged opening 10 through which the head 12 of each key retaining loop 14 may be inserted to secure the key retaining loop in place. A slide member 16, of well known construction, may be employed to hold the head 12 of the loop 14 within the barrel 6 and against accidental removal through the enlarged opening 10.

The key retaining loops illustrated are each

formed with a shank 16, preferably of circular cross section, which extends from the head 12 to the rounded key receiving portion 18 and then is reversely turned to form the free end portion 20 having a terminal end 20' which extends parallel to shank 16 and past which the keys are moved to apply them to the loop. The terminal end 20' is preferably reduced in thickness as shown in Fig. 4 and may be generally arcuate in cross section so that when in normal position and resiliently urged against the shank 16 of the loop these parts will nest together to present a substantially circular assembly engagable by a locking element such as the sleeve 22. In one preferred construction of the loop the material employed and the forming of the bight is such that the terminal end 20' is constantly urged with resilient force against the shank 16 so as to snugly embrace it in substantially semicircular contact. In such instances the locking element may not be a requisite. However, it may likewise be desirable to form the loop such as to be normally open as shown in Fig. 2 in which case the sleeve 22 is essential.

The locking element 22 is carried by the key retaining loop and is preferably in the form of a tubular sleeve having an internal diameter which is less than the diameter of the head 12 but exceeds the diameter of the combined shank 16 and terminal end 20' so that the locking sleeve may be slipped over the free terminal end 20' into the positions shown in Figs. 3 and 4 to prevent disengagement of the end portion from the shank 16 and thereby positively prevent escape or loss of a key from the key retaining loop. The portion 24 of the free end portion 20 below and adjacent the free terminal end 20' is preferably flattened and widened as shown in Fig. 3 so that the locking sleeve cannot pass beyond the portion 24 to be lost or removed from the key retaining loop to which it is applied. The sleeve is thus freely slidable along the shank and key receiving portions of the loop but cannot be lost or removed therefrom. The flattened portion 24 also serves as a finger plate to assist in manually compressing the free end portion 20 inwardly towards the shank 16 when slipping the sleeve 22 over the reduced end 20'.

It has been found that improved resiliency may be imparted to the loop when made of round wire stock by swaging or otherwise flattening the inner and outer surfaces of the return bend or bight of the loop thus to provide flattened surfaces 19 transversely of the plane of the loop. It will be noted that while such surfaces embrace the major portion of the loop they do not extend sufficiently into the shank to prevent the semicircular embracement of the shank by the terminal end 20' of the loop.

In that form of the invention shown in Figs. 1 to 5 the holder plate 4 and the barrel 6 thereof are of a usual and conventional type. The length of the locking sleeve is preferably such that when in engagement with the terminal end 20' the opposite edge of the sleeve will lie closely adjacent to the surface of the barrel 6 of the holder plate. When so constructed and arranged the locking sleeve cannot move along the shank so as to slip out of engagement with the free end of the loop as long as the loop is secured to the barrel of the holder plate. In this way it is impossible for a key to be removed or lost from the loop without removing the loop itself from the barrel of the holder plate of the key container.

When it is desired to apply keys to a key container embodying key retaining loops of the type shown in Figs. 1 to 5 the loop is first removed from the barrel 6 of the container by moving the head 12 of the loop into position opposite the enlarged openings 10 in the slot 8. The loop can then be removed from the barrel whereupon the locking sleeve 22 is movable toward the head 12 and out of engagement with the terminal end 20' of the loop. The loop 18 by reason of its own inherent resiliency will cause the terminal end 20' to spring to its normal open position to permit passage of the sleeve between the terminal end 20' and the shank 16 to assume the position illustrated in Fig. 2. Thereafter a key may be applied to the loop by passage of the free end portion and along the loop to the key receiving portion 18 thereof. The locking sleeve 22 is then moved to a position adjacent the head 12 of the shank, and by manually forcing the normally opened terminal end 20' of loop 18 against the shank 16 by pressing against the flattened section 24, the locking sleeve 22 may then be slipped back along the shank and over the terminal end 20' to its locking position to prevent accidental openings of the loop and loss of the key. Also the tendency for the terminal end 20' to spring away from the shank 16 will serve to hold the sleeve 22 in place when the latter is embracing the shank 16 and the terminal end 20'. The loop may then be returned to the container by inserting the head 12 of the loop into the enlarged openings 10 in a slot 8 and swinging the loop forward so that the shank 16 extends through the narrow portion of the slot 8. The locking sleeve 22 is thereby held against sliding movement which will permit release of the free end portion 20 or permit the loss or escape of a key from the key retaining loop.

In that form of the invention illustrated in Figs. 6 and 7 the holder plate employed is constructed so that accidental removal of the key retaining loop from the holder plate is rendered substantially impossible. For this purpose the positioning plate 30 is formed with a barrel portion 32 which is relatively oval in cross section and provided with a longitudinally extending hump or rib 34 which projects inwardly from the rear face of the barrel 32 which lies adjacent the cover 36. Slots 38 extend circumferentially of the barrel portion and are provided with enlarged end portions 40 located between the rib 34 and the closing edge 42 of the barrel portion.

When applying a key retaining loop of the type shown in Figs. 1 to 5 to a holder plate of the type illustrated in Figs. 6 and 7 the head 12 of the loop is inserted into the enlarged opening 40 at the end of the slot 38 and then must be moved along the slot and over the rib 34 in order for the loop and shank 16 to be swung about to the normal key retaining position. The rib 34 thus imposes a restriction to movement of the shank and head within the barrel of the holder plate so that the head cannot slip freely or accidentally along the slot and into a position adjacent the enlarged opening 40 for removal from the holder plate.

The locking sleeve 22 carried by the key retaining loop further serves to prevent loss of the loop from a barrel of the type illustrated in Figs. 6 and 7, since it limits movement of the shank 16 with respect to the barrel and renders it necessary to manipulate the key retaining loop so as to move the head 12 over the hump formed by the rib 34 and into position for removal of the loop from the key container. Furthermore, with this con-

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struction the enlarged opening 40 at the end of the slot 38 is spaced inward a substantial distance from the edge 44 of the cover 36 and therefore the cover itself serves more effectively to prevent movement of the key retaining loops to positions in which they may be removed from the key holder plate. The locking sleeve therefore serves a dual locking function when used with the holder plate shown in Figs. 6 and 7 and prevents accidental removal of either the key or the loop from the container.

While typical preferred embodiments of the invention are shown in the drawing and herein described, it will be apparent that numerous changes and modifications may be made in the form, construction and arrangement of the elements of the combination without departing from the spirit of the invention. In view thereof it should be understood that the particular embodiments of the invention shown are intended to be illustrative only and are not intended to limit the scope of the invention.

We claim:

The combination with a holder plate formed with a barrel portion having slots therein each of which communicates with an enlarged opening, of key retaining loops each formed with a shank movable within said slots and formed with a head on the end of the shank which is of greater width than the slot but small enough to pass through said enlarged opening, said loops each

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having an opposite free end portion engagable with said shank to hold a key in engagement with the loop, and a freely slidable locking sleeve loosely encircling and free to be slidably movable along said shank into position to embrace said shank and the free end portion of said loop to hold the loop closed, said sleeve being of rigid material and being longer than the distance between the free end of the loop and said barrel portion of the holder plate when said loop is assembled in the barrel portion for preventing movement of the sleeve to release the free end portion of said loop.

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