Sept. 28, 1943. B. S. BERGER 2,330,546

KEY HOLDER

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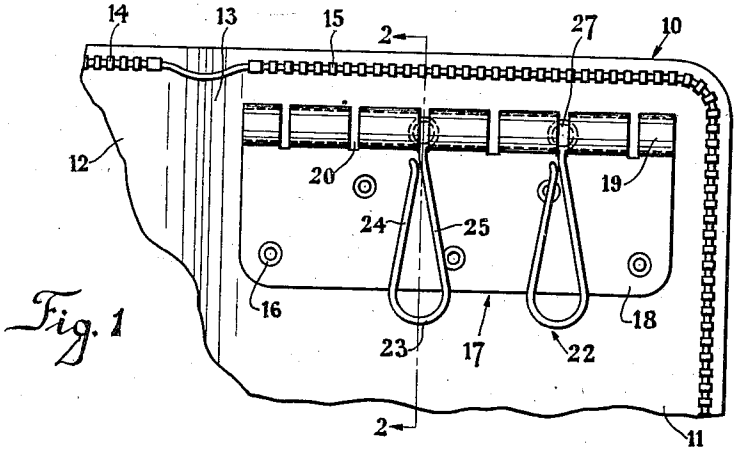


Fig. 1

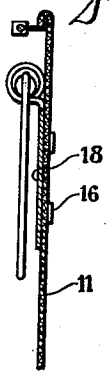


Fig. 2

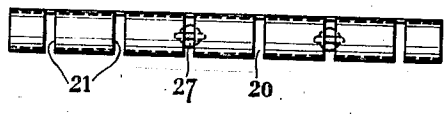


Fig. 3

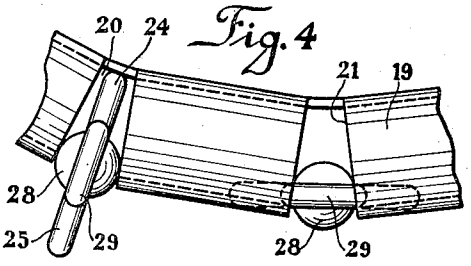


Fig. 4

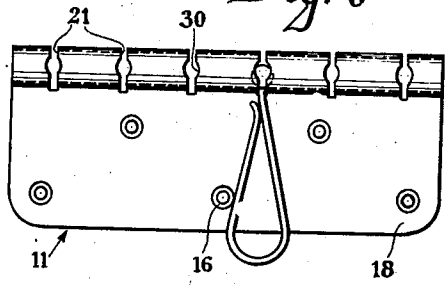


Fig. 6

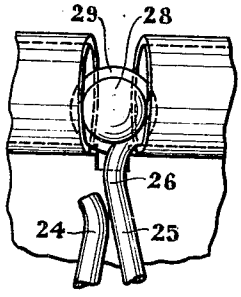


Fig. 5

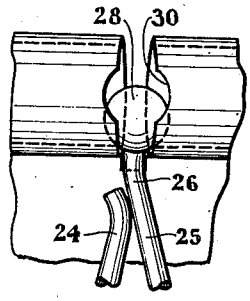


Fig. 7

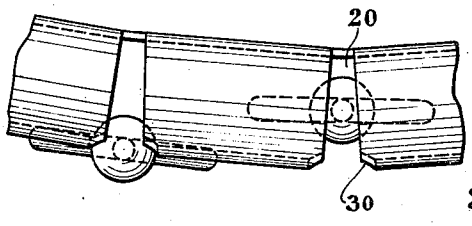


Fig. 8

INVENTOR
BENJAMIN S. BERGER
BY
Upton Bernstein
ATTORNEY

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KEYHOLDER

Benjamin S. Berger, Hewlett, N. Y., assignor to Philip Florin, Inc., New York, N. Y., a corporation of New York

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15 Claims. (Cl. 70—456)

This invention relates to key holders.

It is particularly directed to the type of key case within which a key supporting plate is attached and which removably carries the key-retaining elements.

One object of my invention is to provide a key holder of very simple and inexpensive construction, wherein a key-retaining element may be very easily inserted in or removed from the key supporting plate, and yet each retaining element and key thereon be securely held against possible accidental loss and easily manipulated in use.

Another object of my invention is to provide a key holder wherein the insertion or removal of the individual retaining elements may be accomplished simply in flexing the key plate.

A still further object of my invention is to provide a key holder of the character described which is strong and durable and which shall be highly efficient for the purpose set forth.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the claims.

In the accompanying drawing, in which are shown several of the various possible embodiments of this invention, and in which like numbers refer to like parts,

Fig. 1 is a fragmentary plan view of a key holder constructed in accordance with my invention, shown in open position;

Fig. 2 is a sectional view taken along the line 2—2 of Fig. 1;

Fig. 3 is a top view of the key plate shown in Fig. 1;

Fig. 4 is an enlarged fragmentary view of the key plate in flexed position and illustrating how the key-retaining element may be inserted or removed;

Fig. 5 is a front view of the flexed key plate shown in Fig. 4;

Fig. 6 is a plan view of a key plate according to a modified form of my invention;

Fig. 7 is an enlarged view of a portion of said modified form of key plate as it appears under flection; and

Fig. 8 is a top view thereof.

Referring now to the drawing, and more particularly to Figs. 1 through 5, the key holder 10 comprises a casing of suitable construction and may consist, for example, of a pair of leather panels 11 and 12 integrally joined by a fold section 13. A pair of cooperating slider stringers 14 and 15 may be stitched around the marginal edges of said panels to provide suitable closure means.

Fixedly attached to the upper portion of one of the panels 11 in any suitable manner, as by eyelets 16, is a key plate 17 constructed in accordance with my invention. Said key plate is fabricated from a resilient, flexible material, such as for example spring steel or phenol condensate or other composition material, and comprises a flat body portion 18 having formed along its upper edge a tubular bead 19 which is cut away at regular intervals to form a series of slots 20 having spaced parallel walls 21.

It will be seen that when the key plate 17 is flexed, the walls of the slots 20 will assume an angular divergent position with respect to each other, as clearly shown in Fig. 4. Also, due to the resistance of the bead 19 to bending along its longitudinal axis, the curvature of the plate 18 adjacent the bead will be greatest at the portions adjoining the slots 20, so that but a relatively slight degree of flection of the body 18 of the key plate will cause a considerable divergence of the slot walls 21.

The key-retaining elements 22 adapted to be supported by the key plate 17 may be of any desirable construction, wherein the portion whereby same is attached to the plate is larger than its shank portion. Said element 22 may comprise, for example, a loop 23 of tempered steel wire having a pair of integral, upwardly extending, convergent arms 24 and 25. One of said arms 25 has integrally joined thereto, at its upper end, a shank 26 which is so dimensioned that it is freely slidable between the slot walls 21 when the key plate 17 is unflexed.

Attached to the top of the shank 26 is an enlarged head 27 which is of such size that when the body portion 18 of the key plate is flat, the head 27 is too large to be passed between the walls of the slot 20. Said head 27, in this form of my invention, has the shape of a ball 28 (Figs. 4 and 5) having an annular semi-cylindrical bead 29 formed therearound. Preferably, said bead lies in the same plane as the plane of the arms 24 and 25, so that when the key-retaining elements 22 are disposed in their normal flat position in the key holder 10, as shown in Fig. 1, the bead 29 will be transverse to the slot 20.

When it is desired to mount the key-retaining elements 22 in the key plate 17, the body portion 18 is first manually flexed outwardly, as shown

in Fig. 4. The element 22 which is to be inserted is disposed, as shown in the left hand side of Fig. 4, so that the bead 29 is substantially parallel to the expanded slot 20. The ball 28 is next slipped between the slot walls 21 until a larger portion of the ball lies within the bore of the tubular bead 19. The plate 18 may then be released, whereupon the element 22 is securely held by the key plate 17. It will be noted that in this captive position said element is free to swivel about its own axis and to rotate about the key plate 17.

To remove any selected key-retaining element it is first revolved 90° (left hand element in Fig. 4) from its normal flat position (right hand element in Fig. 4) and then lifted slightly, so that its major horizontal axis will be substantially coincident with the mid-portion of the slot 20, where the walls 21 are most widely divergent. As the weight of the element 22 is sufficient to maintain the head 27 adjacent the lower portion of the slot 20, and as the position of the left hand key-retaining element in Fig. 4 is unnatural, it will be apparent that even if the key plate 17 is by chance flexed, there will not be sufficient clearance at the bottom of the slot to permit liberation of the head 27 of a normally disposed key-retaining element.

In the modified form of my invention, shown in Figs. 6 through 8, additional means is provided to prevent accidental detachment of the key-retaining element 22. Such means comprises the provision of a pair of oppositely disposed notches 30 in the central forward portion of the slot wall 21. Said notches 30 are so formed that when the plate 18 is flexed they will be substantially of the same configuration as the portion of the head 27 which is designed to pass therebetween. Thus, in Figs. 6 through 8, the notches are illustrated as having an arcuate configuration to conform to the contour of the ball 28 employed in this form of my invention. Due to the additional safety device thus provided, I may dispense with the annular semi-cylindrical bead 29, shown in the first form of my invention.

The assembly of the key-retaining elements 22 on the plate 17 in this latter form of my invention is similar to that described in conjunction with Figs. 1 through 4. However, it is necessary when employing the notches 30 to accurately register the balls 28 therewith prior to insertion or assembly of said elements, although the plane of the arms 24 and 25 need not be disposed parallel to the slot 20.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As the various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A key holder comprising a key plate having a flexible, resilient body portion, a pair of relatively spaced members firmly annexed thereto, one of said members being provided with a recess, a key-retaining element having a shank portion smaller than the space between said members, and a head which is larger than the space between said members and so constructed as to be adapted for reception in said recess, said members being so relatively spaced and said body portion being so constructed that when said body portion is flexed the space between said members will become larger than said head, whereby said head may then be freely removed from or inserted between said members.

2. A key holder comprising a key plate having a flexible, resilient body portion, a pair of relatively spaced members projecting from and firmly annexed to a marginal edge of said body portion, one of said members being provided with a recess, a key-retaining element having a shank portion smaller than the space between said members, and a head which is larger than the space between said members and so constructed as to be adapted for reception in said recess, said members being so relatively spaced and said body portion being so constructed that when said body portion is flexed the space between said members will become larger than said head, whereby said head may then be freely removed from or inserted between said members.

3. A key holder comprising a key plate having a flexible, resilient body portion, a pair of relatively spaced members projecting from and firmly annexed to a marginal edge of said body portion, one of said members being provided with a recess, the oppositely disposed walls of said members being disposed in parallel planes, a key-retaining element having a shank portion smaller than the space between said members, and a head which is larger than the space between said members and smaller than said recess, said members being so relatively spaced and said body portion being so constructed that when said body portion is flexed the space between said members will become larger than said head, whereby said head may then be freely removed from or inserted between said members.

4. A key holder comprising a key plate having a flexible, resilient body portion, a pair of relatively spaced members projecting from and firmly annexed to a marginal edge of said body portion, one of said members being provided with an internal round recess, a key-retaining element having a shank portion smaller than the space between said members, and a round head which is larger than the space between said members and smaller than said recess, said members being so relatively spaced and said body portion being so constructed that when said body portion is flexed the space between said members will become larger than said head, whereby said head may then be freely removed from or inserted between said members.

5. A key holder comprising a key plate having a flexible, resilient body portion, a pair of relatively spaced rigid members firmly annexed thereto, one of said members being provided with a recess, a key-retaining element having a shank portion smaller than the space between said members, and a head which is larger than the space between said members and so constructed as to be adapted for reception in said recess, said members being so relatively spaced and said body portion being so constructed that when said body portion is flexed the space between said members will become larger than said head, whereby said head may then be freely removed from or inserted between said members.

6. A key holder comprising a key plate having a flexible, resilient body portion having a pair

of tubular, relatively spaced, rigid members integral therewith, a key-retaining element having a shank portion smaller than the space between said members, and a head which is larger than the space between said members and smaller than the bore of said tubular members, whereby said head may be inserted or removed from between said tubular members by flection of said body portion.

7. A key holder comprising a key plate having a flexible, resilient body portion having a pair of tubular, relatively spaced, rigid members integral therewith, a key-retaining element having a shank portion smaller than the space between said annular members, and a round head including an integral bead, said head being larger than the space between said members and smaller than the bore of said tubular members whereby said head may be inserted or removed from between said tubular members by flection of said body portion.

8. A key holder comprising a key plate having a flexible, resilient body portion having a pair of tubular, relatively spaced members integral therewith, a key-retaining element having a shank portion smaller than the space between said annular members, and a round head which is larger than the space between said members and smaller than the bore of said tubular members whereby said head may be inserted or removed from between said tubular members by flection of said body portion, the longitudinal axes of said tubular members being disposed transversely to the axis about which said plate is flexed.

9. A key holder comprising a key plate having a plurality of rigid tubular members integrally formed at a marginal edge thereof, the end walls of said members being disposed in spaced parallel planes, a key-retaining element having a shank portion smaller than the space between said members, and a round head which is larger than the space between said members and smaller than the bars of said members, whereby said head may be inserted or removed from between said members by flection of said body portion.

10. A key holder comprising a key plate having a plurality of rigid, tubular members integrally formed at a marginal edge thereof, the end walls of said members having a notched central forward portion, a key-retaining element having a shank portion smaller than the space between said members, and a round head which is larger than the space between said members and smaller than the bore of said members, whereby said head may be inserted or removed from between said members by flection of said body portion.

11. A key holder comprising a key plate having a plurality of rigid tubular members integrally formed at a marginal edge thereof, the end walls of said members having an arcuately notched central forward portion, a key-retaining element having a shank portion smaller than the space between said members, and a round head which is larger than the space between said members and smaller than the bore of said members, whereby said head may be inserted or removed from between said members by flection of said body portion.

12. A key plate comprising a flexible, resilient body portion having a plurality of rigid, spaced, tubular members integral with said body portion and projecting from a marginal edge thereof.

13. A key holder comprising a key plate having a flexible, resilient body portion, a pair of relatively spaced members firmly annexed thereto, one of said members being provided with a recess, a key-retaining element having a shank portion smaller than the space between said members, and a head which is larger than the space between said members and so constructed as to be adapted for reception in said recess, whereby said head may be inserted or removed from between said members by flection of said body portion, and means to reinforce said body portion against flection except between said members.

14. A key holder comprising a key plate having a flexible, resilient body portion, a pair of relatively spaced members firmly annexed thereto, one of said members being provided with a recess, a key retaining element having a shank portion smaller than the space between said members, and a head which is larger than the space between said members and so constructed as to be adapted for reception in said recess, the resistance to bending of said plate along a line between said body portion and said members being substantially lower between said members than at said members, whereby, when a bending stress is applied to said body portion along said line, the resultant flection of said body portion along said line will be localized between said members.

15. A key plate comprising a flexible resilient body portion, retaining means to detachably hold a key retaining element, said means including two members movable towards and away from each other, said key retaining element being irremovably held by said retaining means when said members are in proximate relationship and being freely detachable from said retaining means when said members are in remote relationship, means to support said retaining means on said body portion so that upon flection of said body portion to a predetermined degree in the region where said means is supported said members will move from proximate to remote relationship, the resistance of said body portion to bending being substantially lower in the region where said means is supported than in the remainder of said body portion, whereby when a relatively slight bending stress is applied to said body portion resultant flection of said body portion will be localized in the region of said means to said predetermined degree so that said element can be freely removed from said means.

BENJAMIN S. BERGER.