

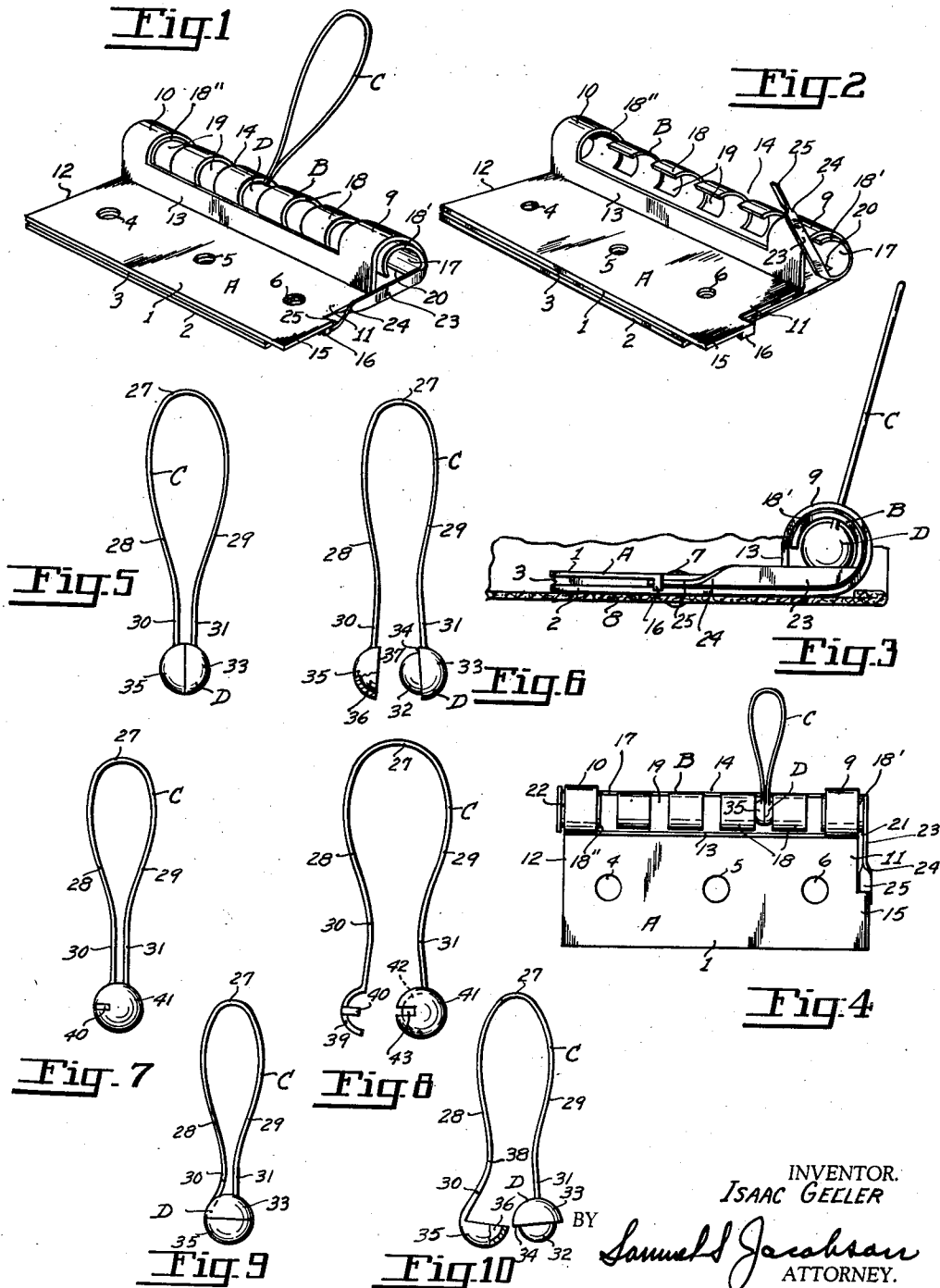
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KEY SUPPORT AND HOLDER THEREFOR

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KEY SUPPORT AND HOLDER THEREFOR

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This invention relates broadly to key supports or hangers and a holder for retaining said key supports or hangers in a conventional type of key case. The invention is specifically directed to a holder possessing structural characteristics which permits the maintenance within the key case of one or more key supports or hangers, and although the holder is constructed so that key supports or hangers of any desired form may be employed, the invention contemplates the employment of key supports or hangers possessing improved structural features permitting their use as individual key rings.

This invention, in some respects is related to the invention disclosed in my United States Patent No. 2,145,477, dated January 31, 1939. It is believed, however, to possess improvements in the structural characteristics of the holder and the key supports or hangers and functions in many respects quite differently from the invention disclosed in the application aforementioned.

It has been found desirable at times to remove certain key supports or hangers from their key case so that only a few remain. It has also been found that on occasion, it is desirable to carry but one or two keys on one's person and not the whole key case. Furthermore, it is sometimes advisable to interchange the positions of the keys within the key case and, on rare occasions perhaps, to replace a damaged or even lost key support or hanger. These desirable functions cannot all be performed by the key cases and holders of the type now in existence. Other disadvantages pointed out in my pending application are also overcome by the present invention. In addition to overcoming these disadvantages, it is within the contemplation of the invention, not only to permit the fulfillment of the objects pointed out in my present pending application, but also to perform other functions hereafter to be more specifically pointed out.

One of the important objects of the invention is to provide key supports or hangers which, when once they are confined within the holder, positively prevent the keys supported thereby from being removed from said supports or hangers without first removing said supports or hangers.

As a corollary to the above object, the invention provides a holder for said key supports or hangers which safeguards against the accidental removal of the supports from the holder.

One of the objects of the present invention is to provide means for facilitating the removal or replacement or interchange of one or more of the

key supports or hangers in a key case of conventional design embodying the principles of the invention.

Another object of the invention is to provide a simple but effective means for locking the key supports or hangers in the holder so that they cannot be removed without the manual manipulation of said locking means.

Still another object of the invention is to provide a holder which is capable of retaining one or more key supports or hangers but which permits the removal of one or more of said supports or hangers from said holder with a minimum of manual manipulation of the locking means.

A further object of the invention is to provide a holder for a plurality of key supports or hangers which are positioned relative to said holder so that any one of the keys supported by said supports or hangers can be selectively secured without interference from the other key supports or hangers.

A very important object of the invention is to provide improved key supports or hangers which, though intended primarily for use as supports for a single key and in combination with a key case, possess, to a limited degree, the characteristics of a key ring and thus may be used independently from the key case for the purpose of supporting and retaining more than one key.

To accomplish the objects and perform the functions heretofore mentioned, the invention employs a holder for one or more key supports or hangers which consists of a plate provided with two ends which form bearings for a multi-slotted member that moves within said bearings to expose or cover the ends of the slots. This multi-slotted member also has a member which locks it against movement, when the slots are covered. The hangers employed are confined within the slots and are capable of swingable and pivotal movement therein. When the key supports are confined within the slots of the multi-slotted member and these slots are covered and the member locked against movement, the key supports or hangers are securely retained within the holder.

Other objects and advantages will become apparent from the description which follows and which must be read in connection with the accompanying drawing showing a preferred form of the holder and several modified forms of the key supports or hangers embodying the principles of my invention, each of which is exemplary of the principles of my invention and in which

Figure 1 is a perspective front view of a holder for key supports or hangers embodying the principles of my invention and showing but one key support embodying the principles of my invention confined within said holder, said holder being in locked position.

Figure 2 is a perspective front view of the holder shown in open position.

Figure 3 is a side view of the holder and one of the key supports, showing the position of the holder when in locked position and when secured to a flexible mounting.

Figure 4 is a top, plan view of the holder shown in Figures 1 to 3 inclusive.

Figures 5 and 6 are elevational views of a key support or hanger embodying the preferred form of my invention, showing respectively the closed position and the open position of the support.

Figures 7 and 8 are elevational views of a key support embodying a slightly modified form of construction disclosing respectively the closed and open positions of the supports.

Figures 9 and 10 are elevational views disclosing still another slightly modified key support and possessing substantially the same structural characteristics as the support shown in Figures 5 and 6 but incorporating a somewhat different connecting method.

In the drawing corresponding parts having the same structural characteristics will be identified by the same reference characters throughout the several views.

The holder employed as a supporting means for the key supports or hangers is composed of two principal members designated generally by reference characters A and B. The member, designated by reference character A, is fabricated from a unitary sheet metal blank and is divided into a top plate 1 and a bottom plate 2, lying in parallel spaced relation to each other. A spacer plate 3, equal in area to the top plate 1, is placed between top plate 1 and bottom plate 2. The function of this spacer plate will shortly become apparent. Openings 4, 5, and 6 are formed through plates 1, 2, and 3 and receive rivets 7 therein in order to secure the plates together and also to secure the holder to a cover 8 as shown in Figure 3. The cover may be of any conventional type and may be composed of leather or other flexible material.

An examination of Figures 1 to 3 inclusive will disclose that the bottom plate 2 is flat throughout all of its area. It is joined to top plate 1 by a pair of arcuately shaped members 9 and 10 which are disposed at the sides 11 and 12 respectively of plate 2. The curvature of members 9 and 10 forms almost a true circle until they join and become integrated with wall 13. Wall 13 extends upwardly from and at right angles to plate 1. It becomes evident that, as a result of these structural features, an elongated slot 14 is formed, which is bounded by the members 9 and 10, the wall 13, and the rear (not shown) of the bottom plate 2. It is within this slot 14 that the major portion of member B operates as will shortly appear.

Top plate 1 has an integrally formed extension 15 laterally protruding from side 11 beyond the remainder of plate 1. A lug 16 is made integrally with and extends downwardly from extension 15. The function of this lug will be explained forthwith. This completes the structural characteristics of the member generally designated by the reference character A.

A detailed description of the structural char-

acteristics of the member generally designated by reference character B will now be given. Member B is also fabricated from a unitary sheet metal blank. It consists of an arcuately shaped wall 17, the length of which is slightly greater than the width of plates 1 and 2. A plurality of fingers 18, arcuate in contour and made integral with the wall 17, are disposed in spaced, parallel relation to each other and form therebetween, as a result of such spacing, a plurality of open-ended slots 19. The curvature of the wall 17 and the fingers 18 would, if the fingers were extended to meet the bottom 20 of the wall 17, form a true circle. Member B, formed as stated, is revolvably positioned between plates 1 and 2 and confined within the slot 14 formed in member A. Two of the fingers 18, which for clarity are designated by numbers 18' and 18'', are disposed under arcuately shaped members 9 and 10 respectively, so that for practical purposes the under sides of arcuately shaped members 9 and 10 form a bearing surface for these two fingers when the member B is actuated.

A shoulder 21 is formed at the end of the fingers 18' and another shoulder 22 is formed at the end of finger 18''. These shoulders 21 and 22 confine the member B within the member A and prevent any lateral movement of member B within member A once it is placed within member A as stated.

An arm 23 extends from the wall 17 at substantially right angles thereto. This arm is twisted as at 24, so that the finger portion 25 lies in a plane at right angles to the plane of the remainder of the arm 23. The arm 23 is of sufficient length to permit the engagement of the finger portion 25 under the lug 16 and, since there is no appreciable lateral movement of the member B once it is positioned between plates 1 and 2 with the arcuately shaped member 10 as bearings therefor, the spring within the arm 23 is utilized to allow the finger portion 25 to be placed under lug 16 in order to hold the member B against movement. This completes the description of the structural characteristics of member B. An explanation of its functions, when combined with member A will be postponed until the structural characteristics of the key supports or hangers disclosed in Figures 5 to 10 inclusive, are related.

In Figures 5 and 6 of the drawing there is shown the closed and open positions respectively of a key support embodying the preferred form of the invention. The support consists of a metallic member, generally designated by reference character C, having inherent spring qualities and which may be circular or flat in cross section. Member C is bent to form an elongated oval loop curved, as shown at 27, and forming legs 28 and 29 which are gradually brought toward each other until they become nearly parallel, as shown at 30 and 31 respectively. A member designated generally by reference character D is secured to the end of the leg 29. This member D is composed of two hemispherical portions 32 and 33 which have their flat faces integrally joined to each other. The diameter of the hemispherical portion 32 is slightly smaller than the diameter of the hemispherical portion 33, thus providing an annular shoulder therebetween as indicated at 34.

A hollow hemispherical member 35 is secured to the end of leg 28. The diameter of the hollow hemispherical member 35 is equal to the diameter of the hemispherical portion 33 and the

concavity of the interior 36 of the hemispherical member 35 is identical in contour to the surface area of hemispherical portion 32. The position of the hollow hemispherical member 35 is such that its interior 36 is in registerable alignment with the portion 32. The legs 28 and 29 of key support C are positioned to seek contact with each other near their parallel positions 30 and 31. This normal urge toward each other results in a spring pressure connection and retention when the hollow hemispherical member 35 is allowed to cover the hemispherical portion 32. By this arrangement the periphery 37 of member 35 abuts the shoulder 34, thus insuring a tight connection between the portion 32 and the member 35 so that a key will remain confined within the loop. When the member 35 covers portion 32, a head possessing a spherical surface outside contour is formed as shown in Figure 5.

In Figures 9 and 10 there is shown a key support or hanger embodying substantially the same elements which are employed in the key support shown in Figures 5 and 6 heretofore described. The difference may be found in the positions assumed by member D and hollow cylindrical member 35. It will be seen that the hemispherical portion 32 is placed with its face downward and that the hollow hemispherical member 35 assumes the position of a ladle with the portion 30 bent as shown at 38 and the leg 28 made slightly longer. These are the only differences between the key support shown in Figures 5 and 6 and the key support shown in Figures 9 and 10. The greatest difference is found in the method employed in securing the hollow spherical member 35 to hemispherical portion 32. To accomplish this it is necessary to slightly press leg 28 downwardly against its normal spring force in order to permit the hollow hemispherical member 35 to frictionally fit over the portion 32. It is evident that such an arrangement takes advantage to the fullest extent of the natural springiness of the material from which the key supports are made and that a positive locking engagement is provided between the legs and, in addition, there results from such an arrangement a spherical head desirable for operative connection to the holder, as shown in Figure 9.

Another modified form of construction which may be employed in the key support is found in Figures 7 and 8. It is evident that no changes are to be found in the legs of loop C, but all changes are confined to the members secured to the ends of the legs 28 and 29. Leg 28 terminates in a bowed shaped finger 39 and has a bowed cross piece 40 intersecting it at right angles. Leg 29 terminates in a spherical member 41 having a groove 42 (shown in dotted line) and another groove 43 intersecting each other and possessing the same degree of curvature as the finger 39 and cross piece 40 respectively. The position of the grooves in the spherical member 41 coincides with the position of the finger and cross piece so that, when the leg 28 is allowed to exercise its normal urge toward leg 29, the finger will enter into groove 42 and the cross piece will enter into groove 43, resulting in an unimpaired spherical member as shown in Figure 7.

Any one of the key supports heretofore described and disclosed in Figures 5 to 10 inclusive may be inserted into open-ended slots 19 as shown in Figures 1, 3, and 4. The width of the open-ended slots 19 and the curved area

formed by fingers 18 is sufficient to allow wide latitude for swingable and swivelable movement to the ball head formed at the ends of the legs of the supports as heretofore stated. Thus it becomes apparent that when a key is strung upon the loop of the support C and the ball head is confined within a slot, the key may be retained in a pendant position or, when desired, may be moved within limits in practically any direction desired.

Modus operandi

Having related in detail the structural characteristics of the elements employed in providing a key support and holder therefor embodying the principles of the invention, it is deemed advisable to point out the mode of operation of the various elements. An examination of Figure 2 will disclose that member B has been revolved within the slot 14 so that the open ends of the slots 19 are exposed. When member B is thus positioned, any key support shown in Figures 5 to 10 inclusive may be inserted into any one of the slots 19 so that the ball head fits into the area formed by the curvature of the arms 18. After the supports are thus inserted into the slots, downward pressure is employed upon the finger portion 25, causing member B to be revolved on its axis and thus bring fingers 18 and the open ends of the slots 19 into position to be covered by wall 13 and imprisoning the ball heads of the key supports C as shown in Figures 1, 3, and 4 within their respective slots 19. In order to insure against the accidental revolving of member B on its axis, the finger portion 25 is forced under the lug 16 and is retained there by the inherent spring qualities of the arm 23. The spacer plate 3 leaves sufficient room between top plate 1 and bottom plate 2 for inserting the finger portion under the lug. By this arrangement, it is impossible to remove the key supports from the slots (and consequently the keys strung thereon) without first disengaging the finger portion 25 from under lug 16 and revolving member B to expose the open ends of slots 19.

From the above description it will be readily seen that key supports and a holder therefor have been produced which can substantially fulfill the objects of the invention set forth herein.

While the invention has been described with considerable particularity in order that the best form of the invention may be readily understood, the invention is not to be considered as limited to the specific details hereinbefore set forth, since changes may be made in any of the details of construction without departing from the true spirit of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and useful is:

1. In a key case of the class described, a top plate and a bottom plate formed from a single sheet of metal, said plates secured in juxtaposition to each other for the greater part of their area, a wall extending upwardly from the top plate, a pair of arcuately shaped portions disposed opposite each other and integrally secured to said wall and to the bottom plate, said portions and wall forming therebetween an elongated slot, a key supports retaining member rotationally positioned within said slot and said arcuately shaped portions, said portions acting as bearings therefor, and a plurality of key sup-

ports insertable within said member for pivotal and swivelable movement therein.

2. In a key case of the class described, a top plate and a bottom plate formed from a single sheet of metal, said plates secured in juxtaposition to each other, a pair of arcuately shaped portions disposed opposite each other and integrally secured to said plates, said portions forming therebetween an elongated slot, a member confined within said slot and rotationally positioned with respect to said arcuately shaped portions, means within said member adapted to receive key supports therein, and a plurality of key supports insertable within said means for pivotal and swivelable movement therein.

3. In a key case of the class described, a top plate and a bottom plate formed from a single sheet of metal, a pair of arcuately formed portions integrally secured to said plates, said portions positioned at the sides of said plates and opposite each other and forming a slot therebetween, a member confined within said slot and rotationally positioned with respect to said plates, said portions forming bearings therefor, means for preventing the removal of said member from its rotational position, and a plurality of key supports removably positioned within said member and adapted for pivotal and swivelable movement therein.

4. In a key case of the class described, a top plate and a bottom plate formed from a single sheet of metal, a pair of arcuately formed portions integrally joined to said plates, a key-supports retaining member rotationally positioned under said portions and between said plates, said arcuately formed portions forming bearings for the key supports retaining member means for preventing removal of said member, means formed within said member for receiving key supports therein, and a plurality of key supports removably positioned within said last-mentioned means.

5. In a key case of the class described, a top plate and a bottom plate formed from a single sheet of metal, said plates being in juxtaposition with respect to each other for the greater part of their area, a wall extending upwardly from the top plate, a pair of arcuately shaped members disposed opposite each other and integrally secured to the wall and to the bottom plate and forming an elongated slot therebetween, a member rotationally positioned within said slot, and between the arcuately shaped members, means formed within said member forming sockets therein, means for preventing the removal of said member from said elongated slot, means for locking said member against rotation, and a plurality of key supports insertable within said sockets for pivotal and swivelable movement therein.

6. A key case assembly comprising, a metallic member bent upon itself to form two supporting plates positioned in juxtaposition to each other, said plates having a cut-out portion located at the meeting margin of the two plates, a pair of beaded portions defining said cut-out portion, a wall extending from the top plate and joined to the beaded portions, means rotationally mounted within the cut-out portion and the beaded portions for holding a plurality of key supports, means for preventing the removal of said first-

mentioned means against rotation.

7. A device characterized as in claim 6 including a plurality of key supports pivotally and swivelably positioned within said first-mentioned means.

8. A device characterized as in claim 6 wherein the means rotationally mounted within the cut-out portion and the beaded portions for holding a plurality of key supports comprises, a member having a plurality of arcuately shaped fingers disposed in spaced, parallel relationship to each other and forming therebetween a plurality of open-ended slots adapted for receiving therein a plurality of key holders for pivotal and swivelable movement.

9. A device characterized as in claim 6 wherein the means for locking the first-mentioned means against rotation comprises an arm extending at right angles to said means and a lug depending from the top plate, said arm adapted for placement in abutting position to said lug.

10. A key case assembly comprising a unitary member bent upon itself to form two plates, a wall extending upwardly from the top plate, a pair of beaded portions secured to said wall and to the bottom plate and positioned at the marginal ends of said plates, a unitary key-supports retaining member rotationally connected to the first-mentioned member and confined between said beaded portions, said beaded portions acting as bearings for said second unitary member, said second member comprising a plurality of arcuately shaped fingers disposed in transverse, spaced, parallel relation and forming therebetween a plurality of open-ended slots, said member being rotatable with relation to said first member so that the open ends of said slots may be covered or uncovered as desired, a plurality of key supports disposed within said slots and adapted for pivotal and swivelable movement therein, and means for rotating said second member for covering or uncovering said slots.

11. A device characterized as in claim 10 including means secured to the top plate of the first-mentioned member for locking the second unitary member against rotation.

12. A key case of the class described comprising, a unitary member bent upon itself to form two plates, a wall extending upwardly from the top plate, a pair of beaded portions secured to said wall and to the bottom plate and positioned at the marginal ends of said plates, and a unitary key supports retaining member rotationally connected to the first-mentioned member and operatively confined between said beaded portions, said beaded portions acting as bearings for said unitary key supports retaining member, said unitary key supports retaining member comprising a plurality of arcuately shaped fingers disposed in transverse, spaced, parallel relation and forming a plurality of open-ended slots therebetween, said unitary key supports retaining member being rotatable with relation to said plate forming member so that the open ends of said slots may be covered or uncovered as desired.

13. A key case characterized as in claim 12 including means for rotating the unitary key supports retaining member within the plate forming member for covering or uncovering said slots.