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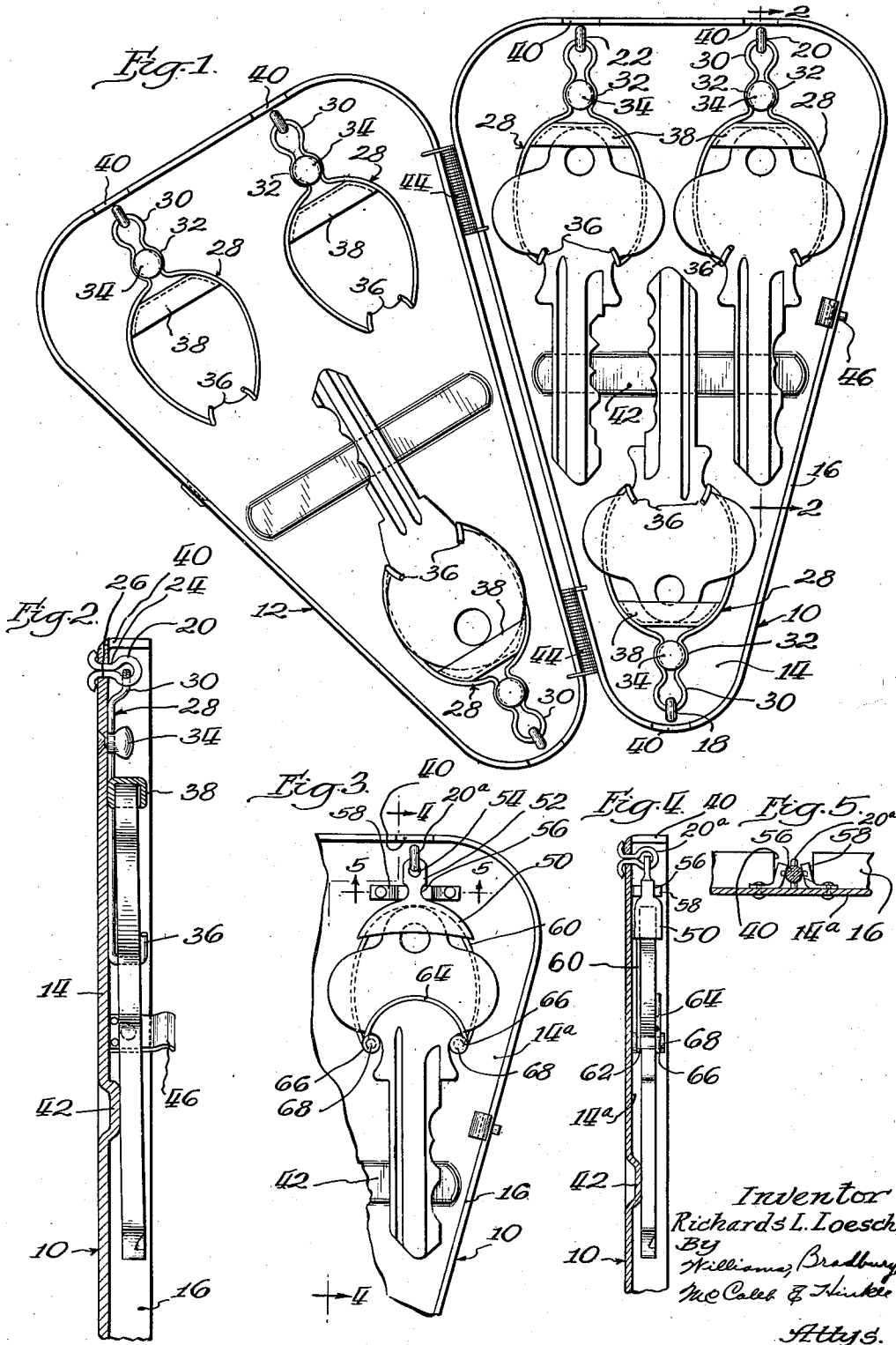
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2,228,726

KEY CASE

Filed Dec. 16, 1938

2 Sheets-Sheet 1



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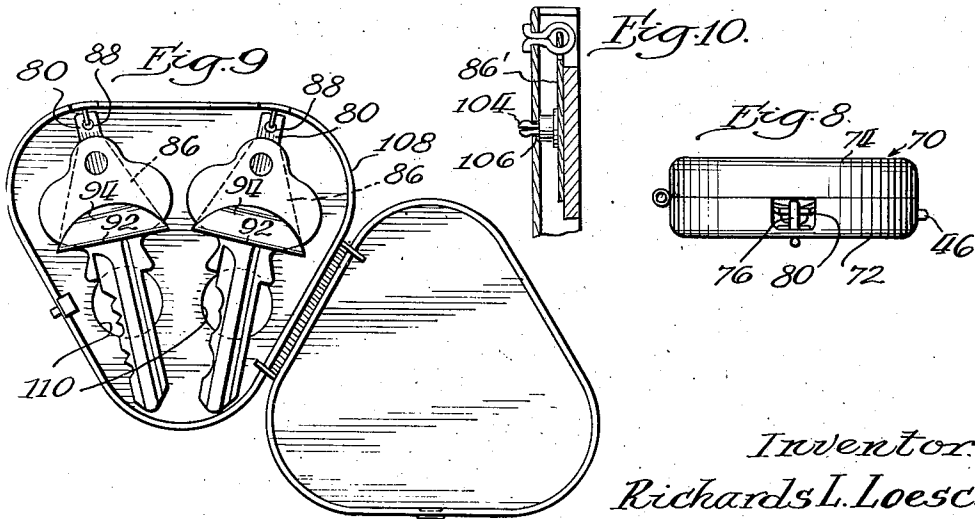
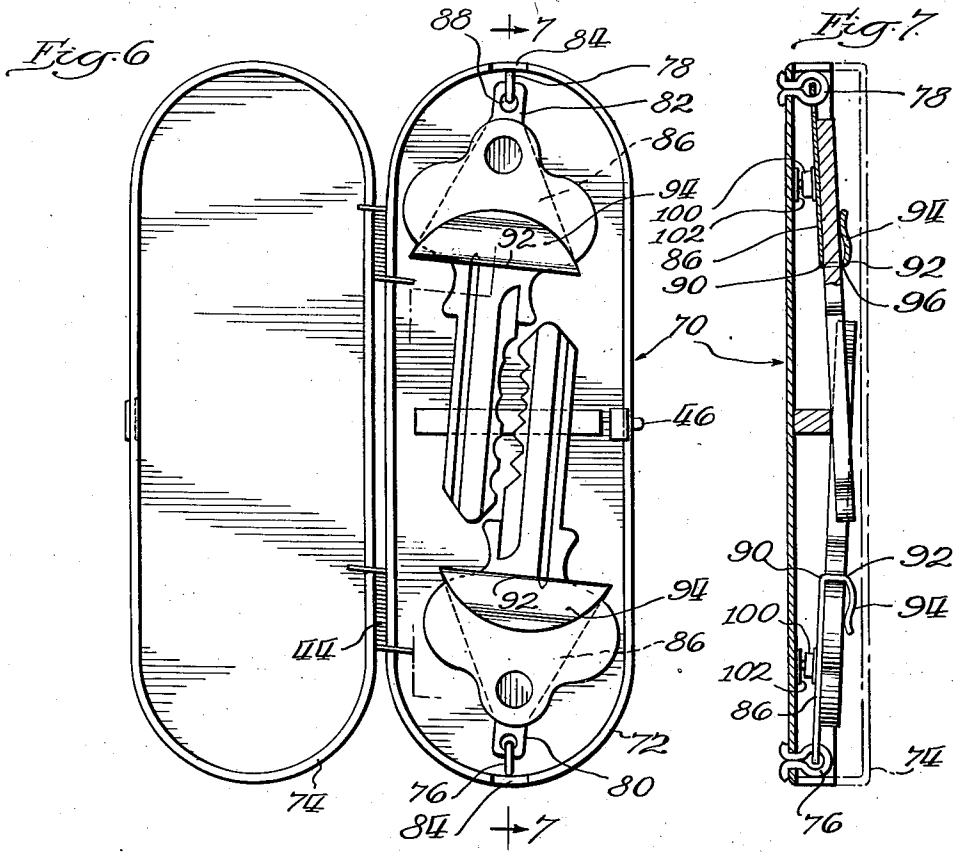
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2 Sheets-Sheet 2



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# UNITED STATES PATENT OFFICE

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## KEY CASE

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11 Claims. (Cl. 70-456)

My invention contemplates and provides a key case of improved appearance which is more convenient in use than those to be had at present. In addition, the key case forming the subject of this invention supports the keys in such a manner that they do not jangle.

The conventional key case comprises a leather folder having at one end a metal strip to which the keys are attached by hooks. With this type of case the keys move about freely and because the case is open at both ends, it collects dust and lint inside and is not, in general, of particularly attractive appearance.

With the above in view, it is an object of my invention to provide a key case which can be manufactured of metal or plastics, such as Bakelite, for instance, at relatively low cost and which, when closed, presents the appearance of a small box much of the type used for cosmetic compacts.

An additional object of this invention is so to support the keys that although any one may be quickly located and moved from the case for insertion into a lock, they are all tightly held so that they cannot move around and jangle when the case is closed.

An additional object is to provide a novel key case which may be opened, a key moved therefrom for insertion into a lock, and the case closed with the key extending therefrom.

It is a further object of this invention to provide a key case which may be operated as outlined above by the sense of touch and with the use of only one hand.

Another object is to provide a novel arrangement of keys that will minimize the over-all dimensions of a key case in which they are contained.

A further object is to provide a novel key hanger for supporting a key within a key case.

The foregoing and other features, objects and advantages of my invention will appear from the ensuing detailed description, wherein reference is made to the accompanying drawings, in which:

Fig. 1 is a plan view of a key case embodying the present invention, showing the case as it appears when open;

Fig. 2 is a sectional view taken in the plane of the line 2-2 of Fig. 1 and looking in the direction indicated by the arrows;

Fig. 3 is a fractional view of a similar key case showing an alternative key hanger;

Fig. 4 is a sectional view looking in the direc-

tion indicated by the arrows and taken in the plane of the line 4-4 of Fig. 3;

Fig. 5 is a fragmentary sectional view which may be regarded as taken in the plane of the line 5-5 of Fig. 4 and looking upwardly as indicated by the arrows;

Fig. 6 is a plan view of an alternative key case embodying my invention;

Fig. 7 is a sectional view taken in the plane of the line 7-7 of Fig. 6 and looking in the direction indicated by the arrows;

Fig. 8 is an end view of the case illustrated in plan in Fig. 6;

Fig. 9 is a plan view of a still further modified key case embodying the present invention; and

Fig. 10 is a fractional view in section showing one arrangement for securing the key hangers in place within a key case.

Similar characters of reference refer to similar parts throughout the several views.

In the drawings, reference numerals 10 and 12 denote, respectively, the right and left halves of a metal box which comprises the largest element of the case, as shown in Fig. 1. Excepting for details that will be pointed out subsequently, the left half 12 may be the reverse complement of the right half 10, and consequently a description of one will suffice as a description of both.

The portion 10 comprises a thin generally acute triangular tray with well-rounded corners. This tray 10 consists of a flat bottom plate 14 bounded by a wall 16 normal thereto. The height of this wall is preferably just sufficient to provide room in the tray for the keys, key hangers, and associated mechanism which will be described later.

This tray, which may be stamped from a single sheet of metal, has three small rings 18, 20 and 22 therein secured to the bottom plate 14. One (18) of these rings is located just inside the portion of the wall closest to the apex of the triangular case, while the other two (20 and 22) lie just inside the wall along the base of the triangle and are equally spaced from the center line of the case. The distance between the rings 20 and 22 should be slightly greater than the width of the widest key intended to be carried in the case. With this arrangement, as will appear later, no two keys supported in this case will touch each other, and the over-all dimensions of the case will be kept relatively small since the bits of adjacent keys will lie side by side and point in opposite directions. As shown in the drawings, these rings are similar to cotter pins and have their shanks 24 extending through

apertures 26 in the plate 14, with the portion of the shank below the plate 14 split and bent over to secure them in place with the axes of the openings through the rings vertical to the center line of the case. If the bent-over portion of the shanks appearing at the back of the case are objectionable, it will be understood that the rings may be soldered or welded to the plate 14, thus keeping the back of the case clear of projections.

These rings carry key hangers 28, all of which may be identical. Each key hanger comprises a length of spring wire shaped to form a loop 30 at its center. This loop extends through one of the rings 18, 20 or 22 and hinges the hanger to the case. Adjacent the loop 30, the spring wire is shaped to provide a slightly bowed apart portion 32 which tightly embraces a knob 34, one of which is positioned directly in front of each of the rings. This knob 34 is riveted, soldered, or otherwise suitably secured to the plate 14 and in conjunction with the bowed portion 32 serves to hold the hanger 28 tightly against the bottom of the case, since the compressing force of the spring wire against the shoulder of the knob tends to urge the hanger downwardly.

From its position in front of the knob 34 both ends of the spring wire are bent to form a U-shaped portion. The ends of the legs of the U are then bent upwardly and backwardly to form hooks 36 to embrace the lower shoulder of a key bow with the extreme end of the bow lying within a trough 38, the ends of which are spot welded or otherwise secured in a suitable manner to the legs of the outwardly bowed portion of the U. The trough 38 may be, and preferably is, formed as a metal stamping.

Preferably, the hooks 36 approach each other quite closely when at rest so that they will grip the key bow tightly when forced apart to receive the key.

The wall 16 immediately adjacent the rings 18, 20 and 22 has slots 40 therein. These slots provide an opening so that when a key is lifted from the case and moved about the hinge, formed by the loop 30 and ring 20, for instance, into its outwardly projecting position, the narrow portion of the hanger between the loop 30 and bowed portion 32 can extend therethrough. With the key in this outward position, it will be apparent that the case can be closed.

To hold the bits of the keys slightly spaced from the bottom of the tray in a position to facilitate their being lifted and moved outwardly, a key rest bar or rib 42 is provided. This rib extends transversely of the tray and may be either a separate piece secured to the plate 14 or it may be made by indenting the plate 14 from the opposite side, as shown in Fig. 2.

The tray 10, just described, and the tray 12, which, as has been explained earlier, is its reverse complement, are joined in a well-known manner by spring biased hinges 44 so that when the case is open it will lie as shown in Fig. 1. When closed, the two trays lie face to face with the keys and key hangers inside. In its closed position the case is secured against opening by a snap catch 46 which may be provided in any well-known manner.

In loading keys into the case, the hooks 36 are spread apart sufficiently to allow the shank of the key to be placed therebetween, and the bit of the key pulled outwardly against the tension of the spring wire until the end of the key bow slips into the trough 38. The key is then swung over into the case until the bows 32 slip over

and embrace the knob 34. The compression of these bows 32 against the knob holds the key bit securely against the rest bar 42 and prevents jangling. With the keys in this position the case may be snapped shut.

When a key is desired for insertion into a lock, the snap catch 46 is pressed, thereby allowing the case to spring open. The thumb or a finger of the same hand may then be used to lift the bit of a key and flip the key outwardly, whereupon the case may be closed with the key extending therefrom.

To return the key to the case, the case is opened, the key flipped back into the case and pressed downwardly until the bows 32 snap over the head of the knob 34.

From the foregoing it will be seen that the case may be manufactured at relatively low cost, is neat in appearance, prevents jangling of the keys, and may be conveniently operated in the dark by the use of only one hand even though the tactile sense of the individual is not highly developed.

In the embodiment of this invention illustrated in Figs. 3, 4 and 5, the case may be similar to the one above described, excepting for the key hangers and the means for securing the keys against the key rest bar when the keys are within the case.

The hanger, as shown in Figs. 3 and 4, comprises a crescent-shaped trough 50 similar to the trough 38 but provided with an extension 52 having a ring 54 to link through the ring 20a. This ring 20a is similar to the ring 20 described in the earlier referred to embodiment. Between the trough 50 and the ring 54 the extension 52 is provided with a narrow neck 56. This neck is adapted to be pressed between two spring clips 58 secured to the back plate 14a to hold the hanger against the bottom of the case. Thus, the narrow neck 56 and spring clips 58 serve much the same purpose as the bows 32 and knob 34 in the embodiment shown in Figs. 1 and 2.

The trough 50 has a spring wire U-shaped member 60 secured therein at its midportion and extending at each end to underlie a key bow. The ends of the spring wire are formed into eyes 62 positioned at approximately the shank of a key when the extremity of the key bow lies within the trough 50 and the eyes are drawn downwardly somewhat against the tension of the spring wire. A second shorter U-shaped spring member 64 with eyes 66 at each end is adapted to lie above a key bow with its eyes 66 registering with the eyes 62. With the two spring members in this position, pins 68 extend through adjacent eyes and are riveted over to connect the two spring members.

In loading a hanger of the above-discussed type, the key bit is slipped between the two spring members 64 and 60 until the lower shoulders of the key bow abut against the pins 68. With the key in this position the bit is pulled outwardly until the extremity of the bow slips into the trough 50. With the key thus secured in the hanger the device is used in much the same manner as the case illustrated in Figs. 1 and 2 and described previously.

The key case shown in Figs. 6, 7 and 8 is much the same as those above described, but is smaller inasmuch as it is designed to hold only two keys. The case, denoted generally by the numeral 70, consists of two hinged together oblong trays 72 and 74 with well-rounded ends. These two trays, 75

excepting as to their shape, may be constructed in the same manner as the trays shown in Fig. 1 and described previously. They may be somewhat thinner, however, since only one of these trays 72 is adapted to contain keys while the other tray 74 acts merely as a cover for the box.

The tray 72 is provided with rings 76 and 78 at opposite ends which are linked to key hangers 80 and 82. The distance between these rings is considerably less than twice the length of a key, since the keys are arranged obliquely within the case with their bits spaced apart and lying side by side. At each end of the case a portion of the side wall is cut away at 84 to permit outward movement of the key hangers.

The key hangers 80 and 82 are somewhat different from those previously described and it will be understood that they may be substituted in the case shown in Fig. 1 in the place of those there shown. Their particular advantage is that they hold the ends of the key bows closer to the rings 76 and 78 and thus enable the use of a smaller case. The hangers consist of a flat plate 86 of spring metal to underlie a key bow and which has an eye 88 at one end to link through the rings 76 and 78. The other end of the plate 86 is bent upwardly at 90 and backwardly upon itself at 92 to form a spring clip 94 to press the bow of the key against the backing plate 86. The upwardly bent portion of the hanger between the points 90 and 92 is provided with a slot 96 to accommodate the shank of the key, as shown in Figs. 6 and 7.

The key is inserted in this retainer by placing the key bit in the slot 96 from above and pushing the key downwardly as far as it will go. To prevent the key from working loose, the surfaces of the plate 86 and clip 94 in contact with the key may be roughened or provided with small points.

The back of the plate 86 is provided with half of a snap fastener 100, the other half 102 of which is secured to the floor of the tray 70, so that when the key is within the case these snap fasteners can be interlocked to prevent jangling of the keys. It will be seen that this snap fastener serves much the same purpose as the clips 58 and neck 56 or the knob 34 and bows 32 used in the earlier described embodiments of this invention.

In the embodiment shown fractionally in Fig. 10, the case is similar to that shown in Figs. 6, 7, and 8, excepting that here the male member 104 of the snap fastener is secured to the key hanger 86' and projects through a small hole 106 in the back of the case. With this arrangement, the end of the member 104 provides a knob or button on the back of the case which can be pressed with the finger to separate the two halves of the snap fastener and permit the key to move outwardly. Since, with this embodiment, it is not necessary that the bits of the keys be elevated into a position where they can be grasped, the key rest bar may be dispensed with.

Fig. 9 shows an alternative space saving arrangement of two keys within a small case. In this case 108, which is generally triangular with rounded corners, both keys are hinged along one edge and lie obliquely within the case. This arrangement of the keys provides sufficient room at one end of the case to accommodate the bows, while the bits are brought close together to enable the case to be made progressively smaller toward its opposite end. Here, as in the embodiment shown in Fig. 10, it is not necessary that a key rest bar be provided to elevate the key bits into a position where they may be easily grasped, inasmuch as apertures 110 are provided in the

back of the case through which a finger may be projected to free the two halves of the snap fasteners and push the keys outwardly.

It should be understood that although for purpose of illustration I have described certain specific embodiments of my invention, I contemplate that reasonable departures may be made therefrom without departing from the scope of this invention.

What I claim as new and useful and desire to secure by United States Letters Patent is:

1. A key case comprising a box having a bottom, side walls and a cover, key hangers adapted rigidly to hold keys by their bows to prevent relative movement between said hangers and said keys, said hangers being hingedly mounted within said box contiguous to said side walls for pivotal movement of said hangers in a plane normal to the bottom of the box when the cover is raised, and the hinge mountings on opposite sides of said box arranged in staggered relation so that bits of adjacent keys secured in said key hangers will lie side by side and point in opposite directions.

2. A key case comprising a receptacle, a key hanger hingedly mounted near one edge of said receptacle and adapted to secure a key by its bow, a key rest bar to support the end of a key bit spaced from the bottom of said receptacle, and clamping means co-operating with said hanger to clamp the hanger to the bottom of the case with the key supported upon said rest bar.

3. A key case comprising a receptacle, a key hanger hingedly mounted near one edge of said receptacle and adapted to secure a key by its bow, and clamping means co-operating with said hanger to secure said hanger relatively immovable when the hanger is in one position.

4. A key case comprising a receptacle, a key hanger hingedly mounted near one edge of said receptacle and adapted to secure a key by its bow, said hanger having a trough for the reception of a portion of a key bow and spring members adapted to urge said key bow into said trough.

5. A key case comprising a receptacle, a key hanger hingedly mounted near one edge of the receptacle, said hanger having a trough for the reception of a portion of a key bow, spring members adapted to urge a key bow into said trough, and clamping means co-operating with the hanger to secure said hanger relatively immovable when the hanger is in one position.

6. A key case comprising a box having a bottom, side walls and a cover, a key hanger hingedly mounted near said side wall, said hanger having a trough for the reception of a portion of a key bow, spring members adapted to urge a key bow into said trough, clamping means co-operating with said hanger to secure the hanger relatively immovable when the hanger is in one position, and a portion of said side wall adjacent to said hinge mounting being cut away to permit outward movement of said hanger.

7. A key case comprising a box having a bottom, side walls and a cover, a key hanger hingedly mounted near said side wall to permit pivotal movement of said hanger in a plane normal to the bottom of the box, a portion of said side wall adjacent to said hinge mounting being cut away to permit outward movement of said hanger, and means in said case to secure said hanger relatively immovable when the hanger is in one position.

8. A key case comprising a box having a bottom, side walls and a cover hinged to one of said side

- walls for pivotal movement in a plane normal to the bottom of the box, a key hanger hingedly mounted to the bottom near said side wall, clamping means co-operating with said hanger to secure the hanger relatively immovable when the hanger is in one position, and a portion of said side wall adjacent to said hinge mounting being cut away to permit outward movement of said hanger.
9. A key case comprising a box having a bottom, side walls and a cover, a key hanger hingedly mounted near said side wall, said hanger having a plate to lie beneath a key and an extension secured to said plate to lie against the upper surface of the key and urge the key against said plate.
10. A key case comprising a box having a bottom, side walls and a cover, a key hanger hingedly mounted near said side wall, said hanger having a plate to lie beneath a key and an extension secured to said plate to lie against the upper surface of the key and urge the key against the upper surface of the key and urge the key against said plate.
11. A key case comprising a box having a bottom, side walls and a top, a plurality of key hangers hingedly mounted on said bottom and adjacent to one of said side walls, said key hangers adapted to lie within the box when in one position and to lie with the larger portion thereof outside the box when in a second position, said key hangers adapted to move from said one position to said second positions in planes normal to the bottom of the box, and means to latch the key hangers to the bottom of the box when the hangers are in said one position.

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