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B. STILLER.

2,313,485

KEY CASE

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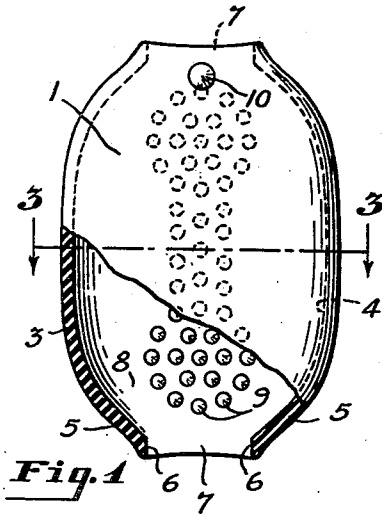


Fig. 1

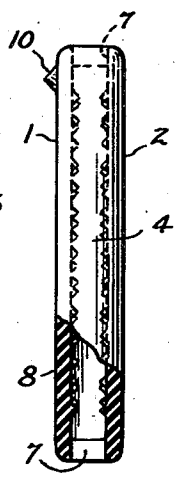


Fig. 2

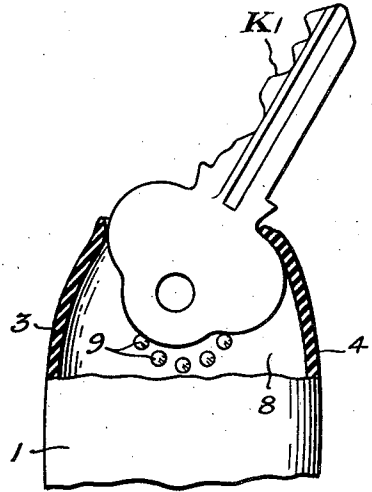


Fig. 4

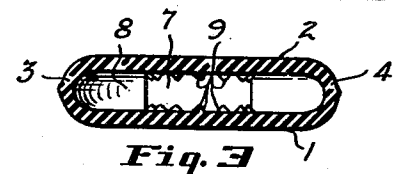


Fig. 3

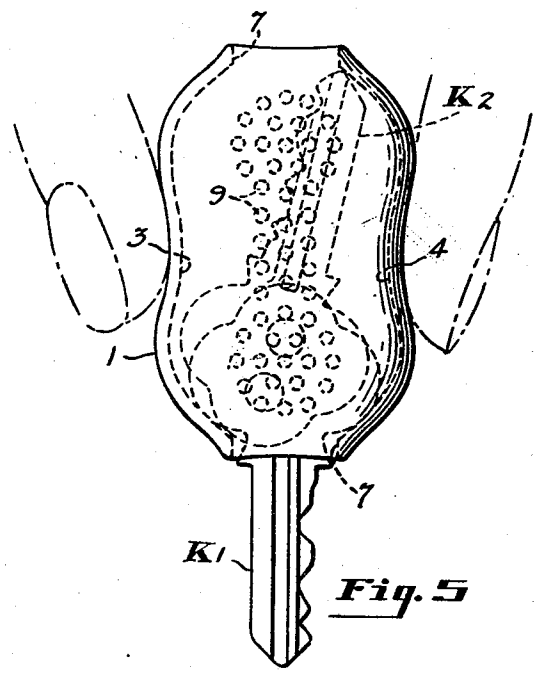


Fig. 5

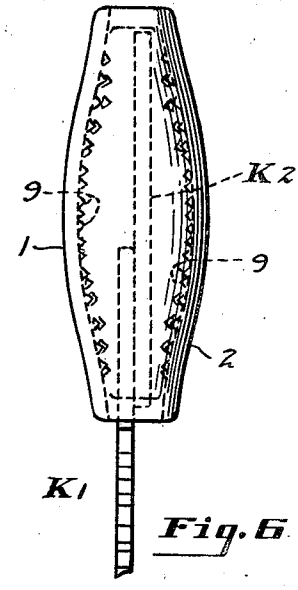


Fig. 6

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KEY CASE

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Application April 30, 1941, Serial No. 391,123

3 Claims. (Cl. 150-40)

This invention relates to key cases and more particularly to improvements in key cases formed of molded plastic composition such as rubber. This application is a continuation in part of my co-pending application Serial No. 232,412 filed September 29, 1938.

It is an object of the invention to provide an improved key case of resilient shape-retaining composition material such as rubber which may be integrally formed by a molding operation and which is complete in itself without the addition of extra parts or pieces, and without the performance of additional manufacturing or fabricating steps other than the usual trimming and finishing. As in the type of key case forming the subject matter of my co-pending application referred to above, it is an object of the present invention to provide an improved key case having a key receiving chamber for one or more keys and from which a single key shank may be projected for use, or retracted into the case after use, by gravity.

Another object is to provide a key case of relatively thin and flat form made in integral fashion of elastic flexible material and having a key-receiving chamber defined by a pair of spaced-apart side walls which are normally disposed in substantially parallel relation with respect to one another and to the sides of a key in the chamber, and which side walls are connected by edge walls and are adapted to bow outwardly when releasing a key upon the application of pressure along the longitudinal edges of the side walls.

A further object is to provide in a key case of the character mentioned slots at opposite ends each of a greater length than the width of the shanks of keys to be accommodated in the case but of less length than the width of the heads of keys to be accommodated, so that in using a key carried by the case only the shank of the key is projected through one of the slots while the head of the used key is retained within the case by engagement with edge wall portions of the case. More specifically the invention aims to provide a key case of integral construction formed of resilient flexible and elastic material such as rubber, wherein the only openings into the key-receiving chamber are elongated slots in the ends of the case whereby in inserting or removing a key from the case one of the slots is distended by the passage therethrough of the key head.

Another object of the invention is to provide in a key case of integral construction means on the inside surfaces of the walls of the case for engaging the head of a key in the chamber when the sides of the case are pinched together for the purpose of preventing retraction of the key shank through the key-projecting slot in use.

A still further object of the invention is to provide a key case which is simple in design and construction and which is relatively inexpensive to manufacture. Other objects and advantages of the invention will become apparent from the following detailed description of a key case embodying the same, which is made in connection with the accompanying drawing wherein like parts throughout the several views are indicated by the same numerals of reference.

In the drawing,

Figure 1 is a side view partly in section and with part broken away of a molded key case embodying the principles of the present invention;

Fig. 2 is an edge view partly in section and with part removed of the key case shown in Fig. 1;

Fig. 3 is a sectional detail taken substantially on the line 3-3 of Fig. 1;

Fig. 4 is a fragmentary detail partly in section showing the manner in which the key is inserted or withdrawn from the key-receiving chamber of the case;

Fig. 5 is a side elevational view somewhat diagrammatic showing the manner in which the key case may be deformed to release one only of a pair of keys contained in the case for projection by gravity through one of the end slots of the case; and

Fig. 6 is an end elevational view corresponding to a showing of the case and the keys in Fig. 5.

Although the key case of the present invention may be made by conventional processes such as dipping and the like, it is preferred to make the cases by molding since molding results in accurate dimensions and also permits the use of surface design and ornamentation.

The case comprises a pair of spaced-apart, generally parallel side walls 1 and 2 of generally ovate form which are connected along their side edges by edge walls 3 and 4. The edge walls are preferably thinner than the side walls as shown in Fig. 3 and include end portions 5 which curve toward one another in following the curvature of the marginal edge portions of the side walls 1 and 2 to which the edge walls are integrally connected.

At the ends of the case ends 6 of the edge walls 3 and 4 are spaced from one another to provide slots 7 between the extreme end portions of the side walls 1 and 2 and through which the shanks of keys are projected for use.

Thus the case provided by the present invention is in the general form of an elastic or resilient rubber tube open at both ends, there being edge wall means having end portions curved or directed toward one another to provide restricted openings that constitute the sole openings through

which keys may be inserted into or withdrawn from the key-receiving chamber indicated at 8.

The width of the key chamber 8 is greater than the width of the head of the key or keys to be accommodated in the chamber while the length of the slots 7 is less than the width of such key heads. Accordingly, to insert or withdraw a key head into or out of the chamber 8 one of the slots 7 must be distended or stretched sufficiently to pass the head of the key. As shown in Fig. 4, when a conventional type of key is being inserted into the chamber 8 one edge of the key head is first inserted and then by rotating the key head so that the key shank moves from right to left as viewed in Fig. 4, the head of the key is drawn into the key chamber 8, this operation being accompanied by distention or stretching of the key case around the opening or slot 7. If desired, the wall portions of the key case may be thickened around the slot openings 7 to reinforce the same against splitting or cracking.

While the length of each of the key projecting slots 7 is less than the width of the heads of keys to be accommodated, it is greater than the width of the key shanks so that the shanks are freely movable through the slots 7 without stretching or distention of the material of the case around the slot openings. This feature is extremely important since continued stretching or distention of the rubber around the slot openings would be deleterious and tend to crack or split the rubber. Therefore, while the occasional stretching or distention of the key case, required for occasional inserting or removing a key therefrom, is not likely to harm the key case, the present invention provides an arrangement wherein during normal use of the keys in the case little or no stretching or distention of the rubber is required.

Cases of the character contemplated herein are extremely useful for handling a pair of frequently used keys, such for example as keys K-1 and K-2 shown in Figs. 5 and 6. The keys are inserted into the chamber 8 so that the shanks thereof are directed or pointed in opposite directions when the key case is held with one of the slots 7 directed downwardly in accordance with the disclosure in my co-pending application identified above, and as shown in Fig. 5 hereof the outward bowing of the side walls 1 and 2 as shown in Fig. 6 releases key K-1, the shank of which is directed downwardly to drop so that the shank is projected through the lowermost slot 7, the head of the key engaging the inside of the curved portions 5 of the edge walls 3 and 4 thus limiting the projecting or dropping movement of the key. Preferably the curvature of the portions 5 of the edge walls is such that the head of the key engages the walls at points spaced from the extreme ends 6, as shown by broken lines in Fig. 5. Accordingly, pressure of the metal of the key against the portions of the case defining the slots 7 is minimized so that the cracking or splitting of the case around the slots 7 is avoided.

It is to be noted in projecting one of the keys in the manner shown in Fig. 5, key K-2 is retained within the chamber 8 since the head thereof is larger than the downwardly directed slot 7, and while the narrow shank of key K-1 drops by gravity through the slot key K-2 is retained within the chamber by engagement of the head thereof with the curved portion or portions 5 of the edge walls at the lowermost end of the key case. However, key K-2 may be projected by upending or reversing the key case so that the key projecting slot at the other end of the key case is lowermost and key K-2 drops through such

slot by gravity when the side walls are bowed outwardly. Although in describing the projecting of the keys it has been explained that the side walls are bowed outwardly to release the keys, it is obvious that the keys can be pushed or drawn out.

In using one of the keys contained in the case of the present invention it is not necessary to withdraw the head of the key from the chamber 8, rather the key is used when the shank thereof is projected as shown by key K-1 in Fig. 5. Thus the present key case forms a convenient means for gripping the key head to place a key in a key hole and for turning or otherwise manipulating the lock. By pinching together the portions of the side walls 1 and 2 overlying the head of the projected key a frictional grip is maintained on such key head, preventing the key from moving into the chamber 8. So that such grip may be augmented, the present invention contemplates the use of integral, relatively small protuberances 9 formed on the inside surface of the side walls 1 and 2. These protuberances are arranged at different regions so that they frictionally engage the side surfaces of key heads in the container when the side walls are pinched together, and some of the protuberances may extend over or across the top or end edge of the key head to engage the same and thereby have an interlocking relationship with the key head which effectively resists retraction of the key shank in use. It is preferred that the protuberances 9 be formed in a group or groups on the inside surfaces of both of the side walls 1 and 2, since the key case of the present invention, when used with a plurality of keys, should have positive engagement with the head of the projected key. Thus the grips or protuberances are disposed in confronting relation to one another.

Furthermore, the protuberances 9 are formed on the portion or portions of the side walls located approximately midway between the edge walls 3 and 4 and so that all of the protuberances are spaced from the edge walls. This arrangement allows all of the protuberances in the several groups thereof to be drawn away from the side surfaces of the keys when the side walls of the key case are bowed outwardly as shown in Fig. 6. For example, it has been found satisfactory if the width of each region over which the protuberances 9 are distributed is of the order of the length of the key projecting slot 7. As can be seen from an inspection of Figs. 1 and 3, the outermost protuberances are spaced sufficiently far from the edge walls 3 and 4 so that when the side walls are bowed outwardly, the edges of the key heads have sufficient clearance along the edge walls to insure that they can move freely in projecting or retracting the key shanks. Whereas, if the protuberances were disposed closely adjacent the edge walls, they would be insufficiently drawn apart, even upon outward bowing of the side walls, and would frictionally engage and impede the movement of the key heads in the key chamber.

As shown in Figs. 5 and 6, the length of the chamber 8 of the key case is slightly greater than the length of the keys to be accommodated in the case. Accordingly, portions of the contained keys are at all times maintained in overlapped relation to one another. (See in this connection how the heads of keys K-1 and K-2 are in side by side relationship in Fig. 6.) Thus, each of the keys, when a pair is inserted in the case, is always disposed either against the side

wall 1 or the side wall 2, and in normal use the positions of the keys do not become interchanged. It is, therefore, desirable to provide a means for distinguishing the two ends of the key case so that the user may know which end of the case the desired key is to be projected through. For example, means such as an integral button or knob 10 may be formed on the outside of one of the side walls and adjacent one end of the case so that the user, by feeling such knob or button, can distinguish the ends of the case.

Referring to Fig. 3, it is to be noted that the edge walls are of curved form and are connected to the side walls 1 and 2 in such manner that pressure applied to the edge walls inherently tends to cause outward bowing of the side walls. The ovate shape of the case in which the span across the end portions of the side walls which are connected by the edge walls is less at the ends of the case than at the center thereof, causes the central portions of the side walls to bow outwardly more than the end portions, as shown in Fig. 6. Thus, the case inherently promotes release of the keys by ample separation of the side walls while yet the shanks may be projected through one of the slots without appreciably shortening the length of the slots.

The principles of the present invention may be utilized in various ways, numerous modifications and alterations being contemplated, substitution of parts and changes in construction being resorted to as desired, it being understood that the embodiments shown in the drawing and described above are given merely for purposes of explanation and illustration without intending to limit the scope of the claims to the specific details disclosed.

What I claim is:

1. A thin flat key case comprising a pair of generally flat side walls of generally ovate form disposed in spaced confronting relation to one another and having curved edge portions at the ends of the case, a pair of edge walls extending between and connecting the edges of the side walls along the side edges of the case to provide between the side walls a key receiving chamber having a length and a width each greater than the corresponding dimensions of a key to be accommodated therein, said edge walls including portions curved toward one another at both ends of the case along said curved edge portions of the side walls and said edge walls being discontinuous across the case ends to provide slots at the opposite ends of the case each having a length greater than the width of the shank portions of keys to be accommodated in the case and less than the width of the heads of such keys, said slots constituting the sole openings into the chamber, the side and edge walls being integrally formed of resilient and elastic shape retaining rubber composition whereby the heads of keys can be inserted into and withdrawn from the chamber only upon enlarging one of said slots by stretching the walls of the case and whereby a pair of keys can be inserted into the chamber with their shanks extending in opposite directions for optional projection of the shank of one key through the slot at one end of the case and optional projection of the shank of the other key through the slot at the other end of the case, the movement of each key in

projecting the shank thereof being limited by engagement between the head of such key and the inside of the curved portions of the edge walls at points spaced from the slots, and a plurality of integral, relatively small protuberances formed on the inside surface of at least one of the side walls, said protuberances being spaced from one another and engageable with a key head in the chamber at spaced portions of the surface of the key head or behind the top edge of the key head when the side walls are pinched together to prevent retraction of the projected key shank in use.

2. A key case comprising integral side walls and edge walls of resilient shape retaining deformable composition defining a single flat chamber of greater length and width than the corresponding dimensions of keys to be accommodated in the case, the edge walls converging toward one another at both ends of the case and being discontinuous across the central portions of the case ends to provide slots which are of less length than the width of the chamber but of sufficient width to freely pass the shank of a key, the thickness of said chamber between the side walls and in the portions thereof adjacent the edge walls being at least substantially as great as in the central portion of the chamber so that when the side walls are bowed outwardly by pressure applied along the edge walls to release a key to drop by gravity for projecting the shank of the key through one of said slots, the side walls are sufficiently far apart at the edge walls to prevent binding of the head of the dropping key between the marginal portions of the side walls, and the converging edge walls engage the end of a dropping key to direct the same toward slot through which the shank is to be projected.

3. A key case comprising integral side walls and edge walls of resilient shape retaining deformable composition defining a single flat chamber of greater length and width than the corresponding dimensions of keys to be accommodated in the case, the edge walls converging toward one another at both ends of the case and being discontinuous across the central portions of the case ends to provide slots which are of less length than the width of the chamber but of sufficient width to freely pass the shank of a key, the thickness of said chamber between the side walls and in the portions thereof adjacent the edge walls being at least substantially as great as in the central portion of the chamber so that when the side walls are bowed outwardly by pressure applied along the edge walls to release a key to drop by gravity for projecting the shank of the key through one of said slots, the side walls are sufficiently far apart at the edge walls to prevent binding of the head of the dropping key between the marginal portions of the side walls, and the converging edge walls engage the end of a dropping key to direct the same toward slot through which the shank is to be projected, the sides of the slots being substantially flush with the inside surfaces of the side walls to provide smooth and substantially unobstructed continuous surfaces for guiding the end of the dropping key therethrough.

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