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(54) **Key and key holder.**

(57) A key and key holder combination has the overall form of a credit card so that the key and holder can be kept in a wallet for emergency use. The key (1) is injection moulded from a plastics material able to withstand the mechanical stresses to be imposed on the key and the holder (2) is separately moulded from a relatively inexpensive plastics material. The key is connected to the holder by hinges (4,5) in a manner which permits free rotation of the key relative to the holder about the hinge axis. Means (6,10) are provided for retaining the key and holder co-planar until the key is required for use.

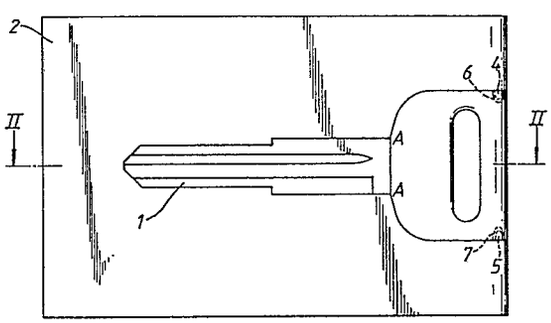

Fig.1.

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Description

KEY AND KEY HOLDER

This invention relates to a key and key holder, and in the preferred embodiment provides a key and key holder which can readily be retained for emergency use in a wallet or handbag.

It has been proposed, for example in EP-A-240840, to produce a combined key and key holder in plastics material, the overall size and shape of the key/key holder combination being substantially the same as that of a conventional credit card whereby the key and key holder can readily be stored in the wallet or handbag of the user for emergency use.

The key and key holder combinations of the prior art do however suffer from a number of disadvantages. In particular, the prior proposal of EP-A-240840 makes use of an integral one-piece moulding comprising the key or keys, the holder or card, and an interconnecting hinge arrangement. This proposal limits the extent to which the keys can be rotated relative to the card without breaking the interconnection between the key and card. Further, having rotated a key relative to the card a set is imposed on the hinge which will tend thereafter to hold the key out of the plane of the card, thereby making the key and card combination difficult to store after it has once been used. Further, the plastics materials necessary for the injection moulding of a key are expensive, and the use of an integral moulding increases the volume of such material needed even though the material of the card itself is not required to withstand any large mechanical stresses.

According to one aspect of the present invention there is provided a key and key holder combination wherein the key holder is in the form of a card of plastics material having a socket therein in which the key is housed, and wherein the key and card are separately formed and are interconnected by a hinge located at one end of the card which permits free rotation of the key relative to the card about the hinge.

The invention enables the key to be manufactured from the relatively expensive plastics material necessary for such purposes, and the card to be manufactured from relatively inexpensive plastics material.

Preferably, means are provided for detaining the key in the plane of the card until the key is required for use, said detaining means being effective after the key has been used to retain the key in the plane of the card.

In a particularly preferred embodiment of the invention the hinge means is formed by a pair of co-axial pins provided on one of the key or the holder, the pins being received in a pair of co-axial sockets formed in the other of the key or the holder. Preferably the card and the key are separate injection mouldings and the pins are integral parts of the holder and are formed as the holder is moulded.

In an alternative construction the hinge means comprises a wire rod which is secured to the card and the key to form a hinge pin. Preferably, the material of the card is moulded about the wire whereby the wire is permanently retained by the card, and the key is formed in the head thereof with a slot in which the wire is received to permit rotation of the key about the axis of the wire relative to the card.

The invention will be better understood from the following description of a preferred embodiment thereof, given by way of example only, reference being had to the accompanying drawing wherein:

Figure 1 is a plan view of a preferred embodiment of the invention;

Figure 2 is a section on the line II-II of Figure 1; and

Figures 3 and 4 are views corresponding to Figures 1 and 2 showing an alternative embodiment of the invention, Figure 4 being a section on the line IV-IV of Figure 3.

Referring to the drawings, there is shown a combination of a key 1 and a card-like key holder 2. The overall size and shape of the combination is substantially the same as that of the conventional credit card enabling the key and key holder to be stored in a wallet or hand bag for emergency use. The primary intended use of the key/key holder combination is as an emergency car key, but it will be appreciated that the exact nature of the key is not critical, and the key could, for example, be in the form of a conventional night-latch key.

The key 1 is injection moulded from any suitable plastics material, bearing in mind the function the key is intended to form. In general, the key as moulded will be a "blank" which will be cut to the particular tumbler combination of the lock with which it is intended to be used.

The card 2 is formed by any suitable means, for example by injection moulding. Because the card is merely required to perform the function of a holder for the key it can be manufactured from a relatively inexpensive plastics material.

The key and card are interconnected by a hinge means 3 at one edge of the card. In the preferred embodiment the hinge comprises a pair of co-axial pins 4,5 which are integrally formed with the holder and are received in a corresponding pair of sockets 6,7 formed in the key. In the alternative construction shown in Figures 3 and 4 the hinge means comprises a wire 8 about which the material of the card 2 is injection moulded so that the end regions of the wire are permanently connected to the card. The key 1 in the case of the Figure 3,4 embodiment is injection moulded to include a snap-over slot 9 to receive the wire 8. The arrangements are such that after the key has been moulded, or indeed after it has been cut, it can be snapped on to pins 4,5 (in the case of the Figure 1,2 embodiment) or on to the wire 8 (in the case of the Figure 3,4 embodiment) to form the hinged connection. In both embodiments the hinged connections permit substantially unlimited rotation of the key relative to the card about the axis of the hinge, as shown in broken lines in

Figures 2 and 4. Further, because hinging movement of the key does not deform the hinge, the hinge takes no permanent set as a result of rotation of the key, and accordingly after the key has been used it can readily be pressed back into the slot provided for it in the card, and will remain there for future use.

Preferably, means are provided for detaining the key in the plane of the card. In the preferred embodiments of the invention, the retaining means comprises an undercut portion 10 of the card to engage the tip of the key. Further, although a small clearance gap is provided between the periphery of the key and the complementary slot in the card over the majority of the periphery of the key, the clearance gap is reduced to zero at the points A whereby the key is an interference fit with the card at this point. The combination of the undercut 10 and the interference fit at the points A is effective to retain the key in the plane of the card until required for use. If desired, the retention of the key can further be aided by adhesively securing a sheet of, e.g. plastic material 6 to the underside of the key and card. Such material can then be peeled off or torn through when the key is required for use.

The surface of the card 2 surrounding the key, and the entire surface of the sheet 6 may be used to bear advertising material if so required.

Claims

1. A key and key holder combination wherein the key holder is in the form of a card of plastics material having a socket therein in which the key is housed, and wherein the key and card are separately formed and are interconnected by a hinge located at one end of the card which permits free rotation of the key relative to the card about the hinge.

2. A key and key holder combination according to claim 1 wherein the key and the key holder are formed from different plastics materials.

3. A key and key holder combination according to claim 2 wherein the key and the key holder are separately formed by injection moulding.

4. A key and key holder combination according to any preceding claim wherein means are provided for detaining the key in the plane of the card until the key is required for use.

5. A key and key holder combination according to claim 4 wherein said detaining means is effective after the key has been used to retain the key in the plane of the card.

6. A key and key holder combination according to claim 4 or claim 5 wherein the detaining means comprises an undercut on the holder which limits rotation of the key relative to the holder beyond the plane of the holder in one rotational direction and wherein the key is an interference fit with the socket to maintain the plane of the key coincident with the plane of the socket, a sheet of material being optionally adhesively secured to the surface of the key and key holder combination.

7. A key and key holder combination according to any preceding claim wherein the hinge means is formed by a pair of co-axial pins provided on one of the key or the holder, the pins being received in a pair of co-axial sockets formed in the other of the key or the holder.

8. A key and key holder combination according to claim 7 wherein the card and the key are separate injection mouldings and the pins are integral parts of the holder and are formed as the holder is moulded.

9. A key and key holder combination according to any of claims 1 to 7 wherein the hinge means comprises a wire which is secured to the card and the key to form a hinge pin.

10. A key and key holder combination according to claim 9 wherein the material of the card is moulded about the wire whereby the wire is permanently retained by the card, and the key is formed in the head thereof with a slot in which the wire is received to permit rotation of the key about the axis of the wire relative to the card.

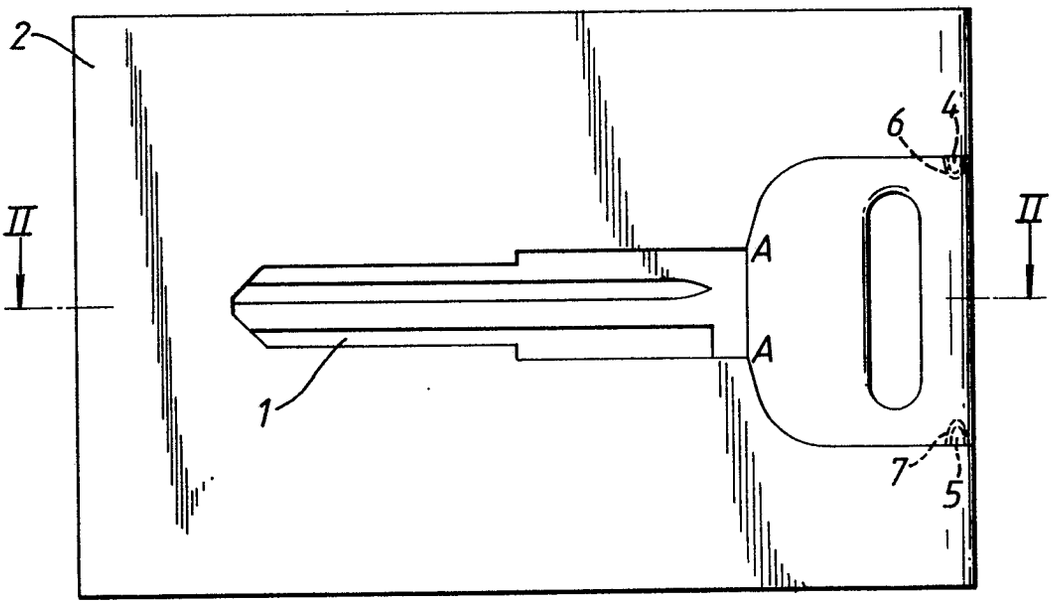

Fig.1.

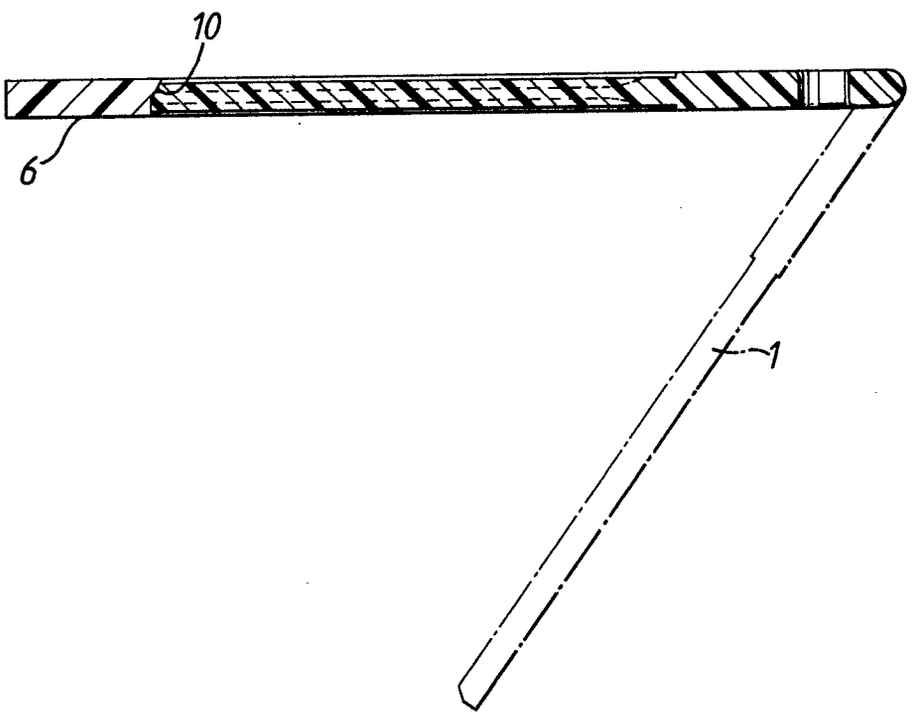

Fig. 2.

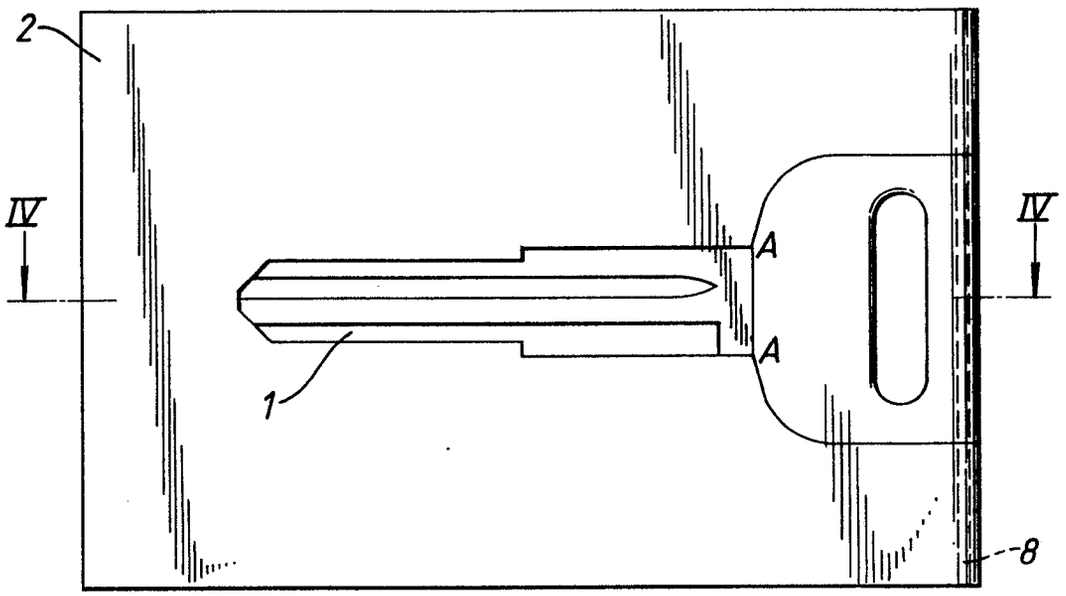

Fig. 3.

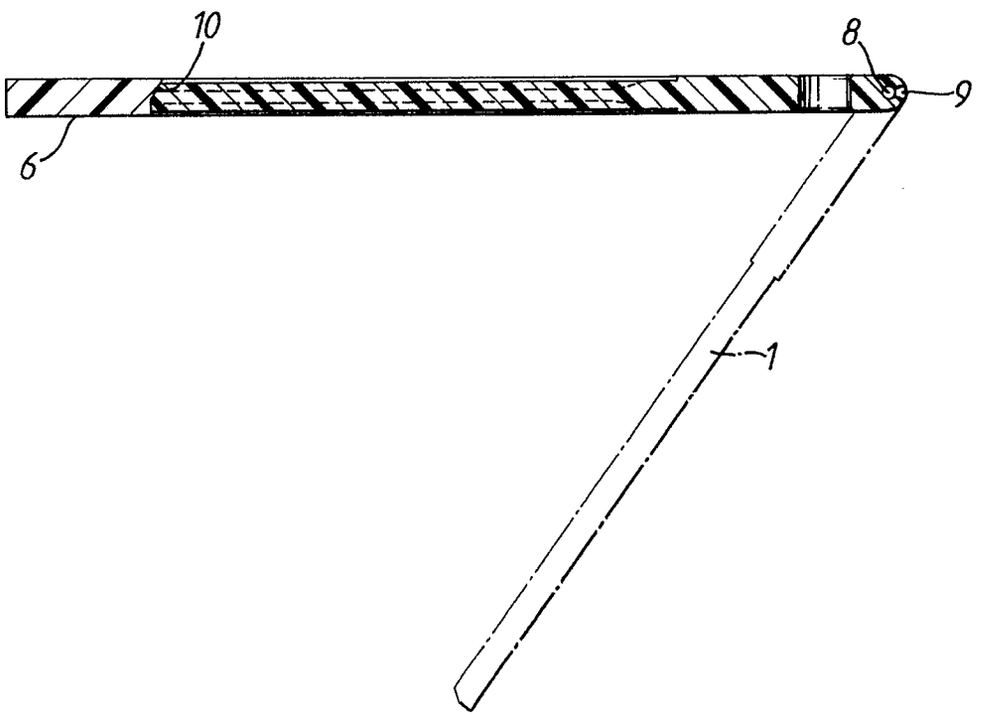

Fig. 4.