

PATENT SPECIFICATION

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DRAWINGS ATTACHED

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(54) SECURITY DEVICE

(71) I, CHONG NGIAN KHONG, of Malaysian Nationality, of 20, Neram Crescent, Singapore 28, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to a device which when attached to a document, container or like article, acts as a seal for that article. The device does not prevent entry to any such article to which it is applied, but merely guarantees the authenticity of the article, and prevents entry to the article without the owners knowledge. The present invention finds particular use in the sealing of oil containers.

Present known seal devices are typified by the seal "Tydon" (Tydon is a Registered Trade Mark) which is made of metal and is very intricate.

The present invention attempts to provide a relatively cheap and simple device in comparison to prior art.

According to the present invention therefore, there is a device for sealing an article which comprises: a key of flexible material and a lock member having a cavity and a passage leading to the cavity; the key having a head, neck and shoulder which are adapted to enter the passage in the lock member; the cavity being adapted to receive the head and allow partial rotation of the head about a horizontal axis of the head, neck and shoulder; the shoulder being non-rotatable about said longitudinal axis when the shoulder is located in the passage; the neck being shorter than the length of the passage such that the shoulder, the neck and at least part of the head are together locatable in the passage before the head has entered the cavity.

Preferably the key is attached to a flexible band. Also the lock is attached to the

flexible band.

An embodiment of the present invention will now be described, by way of example, with reference to the accompanying drawings in which:

Figure 1 is a plan view of a device in an open position showing the key attached to the lock by means of a flexible strip;

Figure 2 is a front elevation of the same device in an open position and illustrates the cavity and passage;

Figure 3 is a side elevation of the device also in an open position;

Figure 4 illustrates a half-piece of the lock and is a section along line X-X of Figure 2.

The device comprises a key 1 and a lock 2. When the key has been inserted into the lock, in a particular manner as hereinafter described, the key cannot be withdrawn without breaking the lock open.

The key has a head 3, a neck 4, and a shoulder 5 which are formed as one member from medium impact polyethylene. The head 3 and shoulder 5 are flat and lie in the same plane when the device is in an open position. The neck 4 has a circular cross-section.

A flexible band 6 extends from the shoulder 5 of the key 1 to the lock 2. Lock 2 is formed, by injection moulding, in two identical half-pieces 7. (Figure 4)

Each half-piece 7 has a well 8 and a duct 9 which extends from a side of the half-piece 7 to the well 8. Two longitudinal top edges 10 of the ducts 9 are bevelled. In plan, the half-piece 7 is circular although other convenient shapes may be used. The ducts 9 extends along a diameter of the half-piece 7 from an off-centre position on a side of the well 8.

The lock 2 is formed by attaching together two said half-pieces 7. Since each well 8 is at an off-centre position in the half-piece 7, then when the lock 2 is

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formed the wells 8 do not coincide but form an irregular shaped cavity 12 having ledges 11 (Figure 2). The ducts 9 however coincide forming a passageway 13 having a longitudinal central portion of greater width than the width of a remaining portion of the passageway 13, due to bevelled edges 10.

In order to lock the key 1 in the lock 2 when the device is used, the head 3 and part of neck 4 are inserted into passageway 13 of the lock 2. The shoulder 5 of the key 1 is then rotated about the longitudinal axis of the head, neck and shoulder, through 180°. A torque is thereby produced on the neck 4, the wider longitudinal central portion of the passageway 13 facilitating twisting movement of the neck 4 therein.

The shoulder 5 of the key is then pushed into the passageway 13, the head 3 simultaneously entering the cavity 12 wherein the head 3 rotates about the longitudinal axis due to the torque on the resilient neck 4. The ledges 11 on the cavity walls permit only partial rotation of the head 3, thereby preventing it from rotating through 180° which would permit withdrawal of the key 1 from the lock 2.

The length of the neck 4 is less than the length of the passageway 13, and therefore when the shoulder 5 has been located in the passageway 13 and the head 3 in the cavity 12, the shoulder 5 cannot be rotated further. Such further rotation would permit withdrawal of the key which is undesirable. Thus the device is locked when the head 3 has entered the cavity 12, and the device cannot be opened without obvious damage thereto.

The operation of the device relies largely upon the springy nature of the material from which the key, notably the neck, is made.

The size of the device depends largely upon the duty for which the device is required, and the shape of the cavity 12 may vary from that hereinbefore described, provided that the head 3 is prevented from rotating through 90° within the cavity 12.

For convenience an identification member can be molded onto the lock 2 or any other part of the device.

WHAT I CLAIM IS:

1. A device for sealing an article which comprises: a key of flexible material and a lock member having a cavity and a passage leading to the cavity; the key having a head, neck and shoulder which are adapted to enter the passage in the lock member; the cavity being adapted to receive the head and allow partial rotation of the head about a longitudinal axis of the head, neck and shoulder; the shoulder being non-rotatable about said longitudinal axis when the shoulder is located in the passage; the neck being shorter than the length of the passage, such that the shoulder, the neck, and at least part of the head are together locatable in the passage before the head has entered the cavity.

2. A device for sealing an article wherein the key is attached to a flexible band.

3. A device for sealing an article wherein the lock member is attached to the flexible band.

4. A device for sealing an article substantially as hereinbefore described and with reference to the accompanying drawings.

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