May 28, 1935. S. N. HOPE 2,002,856

SEAL

Filed July 9, 1934

FIG. 1

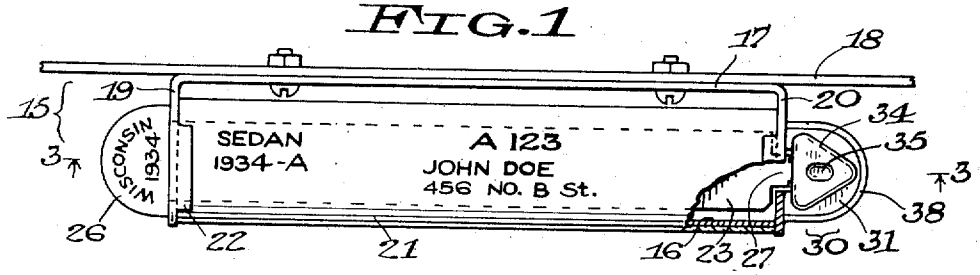


FIG. 2

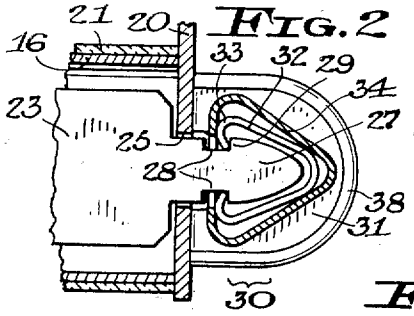


FIG. 3

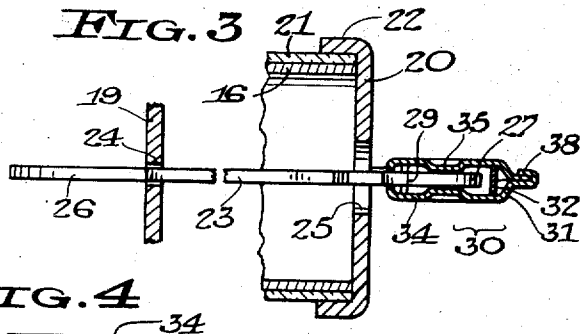


FIG. 4

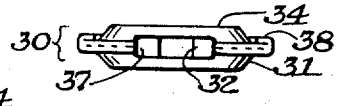


FIG. 5

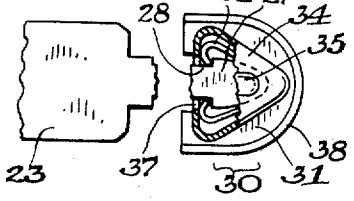


FIG. 7



FIG. 6

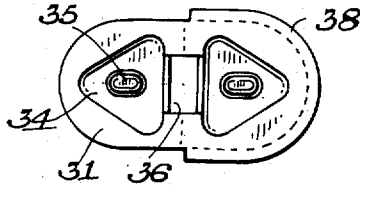


FIG. 8

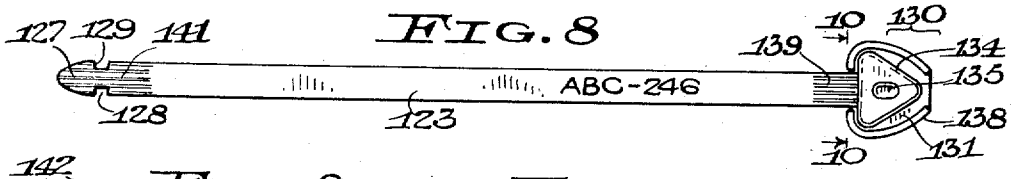


FIG. 9

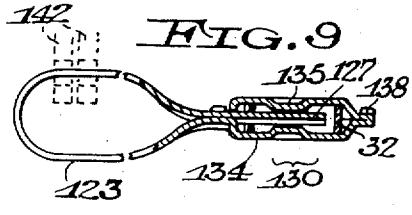


FIG. 11

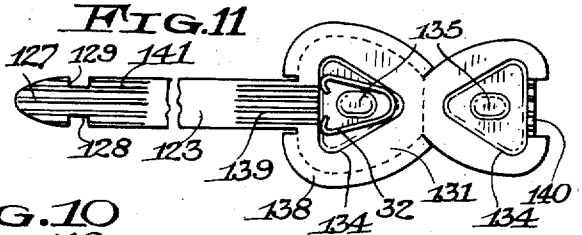
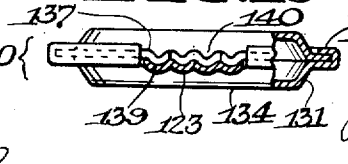


FIG. 10



WITNESSES

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2,002,856

SEAL

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Application July 9, 1934, Serial No. 734,325

3 Claims. (Cl. 292—318)

The invention relates to seals for protecting various articles, such as containers and cars.

An object of the invention is to provide a reliable and inexpensive seal adaptable for various uses and capable of being easily applied without the use of tools.

Another object of the invention is to provide a seal in which an apertured housing is formed by a folded sheet metal blank embossed to form a chamber for confining and positioning a resilient insert-locking member.

A further object is to provide a seal in which the housing has an insert-receiving aperture of serrated shape to discourage tampering after the seal is applied.

The invention further consists in the several features hereinafter described and claimed.

In the accompanying drawing,

Fig. 1 is a top view of a card holder equipped with a seal embodying the invention;

Fig. 2 is a sectional view of the seal and one end portion of the holder;

Fig. 3 is another sectional view of the holder and seal taken on the line 3—3 of Fig. 1;

Fig. 4 is an edge view of the seal showing the insert-receiving opening;

Fig. 5 is a view of the seal and insert as they appear after the seal is twisted to break the insert, parts being shown in section;

Fig. 6 is a plan view of the embossed seal blank before folding to form a housing;

Fig. 7 is a perspective view of the resilient locking member;

Fig. 8 is a view of a modified form of seal suitable for use as a car seal;

Fig. 9 is a sectional view of the seal of Fig. 8 as it appears when in locked condition;

Fig. 10 is a sectional view taken on the line 10—10 of Fig. 8, and

Fig. 11 is a plan view of the seal of Fig. 8 before it is folded to form the housing.

In that form of the invention shown in Figs. 1 to 7, 15 designates a card holder, here indicated to be used for displaying a vehicle license card 16. The card holder comprises a frame or bracket 17 secured to a suitable support 18, such as an instrument panel of an automobile, and having spaced arms 19 and 20 between which a resilient transparent tube 21 is rotatably mounted, the card 16 being rolled inside the tube. In the construction illustrated, the tube 21 is confined at its ends by arcuate flanges 22 formed on the bracket arms 19 and 20.

A flat metal key 23 extends through the tube 21 and passes through a slot 24 and opening 25 in the respective bracket arms 19 and 20. The end of the key adjacent the slot 24 is provided with a head 26 bearing suitable indicia, and the other end is reduced in width to form a rounded and somewhat pointed insert 27. Registering notches 28 are formed in the opposite edges of the reduced end of the key to present locking shoulders or abutments 29.

The insert-forming end 27 of the key is engageable with a lock or seal 30 to prevent removal of the key and card-receiving tube except by breaking the key. The seal comprises an embossed sheet metal housing 31 having mounted therein a resilient locking member 32 formed by a loop-shaped or heart-shaped leaf spring having spaced opposite inwardly hooked ends 33. The housing is preferably formed of a single piece of sheet metal folded on itself. Fig. 6 shows the embossed housing blank before folding, the bending of the blank being effected along the dotted lines. The two halves of the blank have formed thereon triangular embossments 34 with rounded corners. When the blank is folded on itself, these embossments register to form a triangular chamber having opposite parallel faces which position the locking member. Arranged centrally within each embossment is a rounded oval dent 35. A rectangular opening 36 centrally intersects the folding line of the blank, so that when the blank is folded a slot 37 is formed for admitting the key insert into the housing. The locking member 32 loosely fits in the housing with the hooked ends adjacent the slot 37. The dents 35 of the housing project into the space within the locking member, and the dents are spaced from each other to permit the passage therebetween of the key insert, as seen in Fig. 3, thus positioning the insert within the housing. The dents also prevent excessive side motion of the locking member, so as to center the locking member with respect to the slot 37. After the housing blank is folded on itself to enclose the locking member 32, the edge 38 of one half of the blank is folded over the edge of the other half to produce a firm joint. If desired, soldering or welding may also be used.

To apply the seal, it is only necessary to mount the key 23 in place and then push the seal 30 onto the key insert 27, the insert entering the slot 37 in the seal housing. The hooked ends 33 of the resilient locking member 32 are urged apart by the entering insert and finally snap into the notches 28 of the insert, thus preventing separation of the insert and seal. The locking member is confined by the housing against relative longi-

tudinal movement. The seal lies close to the apertured arm 20 of the bracket, thus interfering with any attempted use of tools to remove the seal or key. If desired, the insert may fit closely between the dents 35 so as to prevent rattling of the seal. When the seal is to be removed, it is only necessary to twist it, thereby breaking the insert at the weak part between the notches 28, the slot 24 resisting turning of the key. The broken key cannot be used again, and the seal is also incapable of further use, since the broken insert remains in the seal as seen in Fig. 5. Any unauthorized forcible opening of the seal housing will result in a noticeable mutilation.

Figs. 8 to 11 illustrate a car seal embodying the invention. In this form of the invention, a seal 130 comprises an embossed sheet metal housing 131 having mounted therein a resilient locking member 32, above described. The housing is preferably formed of a single piece of sheet metal folded on itself. Fig. 11 shows the embossed housing blank before folding, the bending of the blank being effected along the dotted lines. The two halves of the blank have formed therein triangular embossments 134, similar to the embossments 34. When the blank is folded the embossments register to form a triangular chamber. Arranged centrally within each embossment is a rounded oval dent 135, similar to the dent 35. A pliable metal strap 123 is connected at one end, preferably integrally, with the housing blank and has a rounded insert 127 formed at the other end. Registering notches 128 are formed in the opposite edges of the insert to present shoulders or abutments 129. When the housing blank is folded on itself, a slot 137 is formed to admit the insert 127 into the housing. The slot is preferably of serrated shape, as seen in Fig. 10, the inner end of the strap 123 having longitudinal corrugations 139 and the spaced adjacent edge of the housing having corresponding teeth 140. The insert-forming end of the strap has correspondingly shaped longitudinal corrugations 141. The locking member 32 loosely fits in the housing 131 with the hooked ends adjacent the slot 137. After the housing blank is folded on itself to enclose the locking member, the edge 138 of one half of the blank is folded over the edge of the other half, as in the Fig. 1 device. The foldable edge 138 may be formed on either half of the blank.

To apply the car seal, it is only necessary to thread the strap 123 through apertured parts 142 to be sealed, and then push the corrugated insert 127 into the seal housing 131, the insert entering the serrated slot 137 in the housing. The hooked ends of the resilient locking member 32 are urged apart by the entering insert and finally snap into the notches 128 of the insert, thus preventing separation of the insert and seal housing. The insert fits closely in the serrated slot 137, and the serrated slot interferes with any attempted use of tools to release the insert from the seal housing. When the seal is to be removed, it is either twisted off or cut off and cannot be used again, since the severed end portion of the insert remains in the housing.

In either form of device, the inwardly projecting dents formed on the opposite walls of the housing, as well as the insert-receiving slot, serve to substantially center the shouldered insert with respect to the gripping edges of the leaf spring, so that the leaf spring may fit quite loosely in the housing without danger of losing engagement with a relatively thin insert.

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

1. A seal comprising a housing having opposite walls and an insert-receiving opening, and a resilient loop-shaped insert-locking member in said housing, at least one of said walls having a part projecting into the space within said loop-shaped member to form an insert-confining space between said part and the opposite wall of the housing.

2. A seal comprising a housing having opposite walls and an insert-receiving opening, and a resilient loop-shaped insert-locking member in said housing, said walls having parts projecting into the space within said loop-shaped member, and said parts forming between them an insert-confining space to space an introduced insert laterally from the opposite side edges of the insert-locking member.

3. A seal comprising complementary sheet metal housing portions secured together and having opposite embossed walls forming between them a substantially triangular chamber, there being an insert-receiving slot communicating with one of the three sides of the chamber, and a V-shaped leaf spring movably fitting in said chamber and having its converging sides adjacent two converging sides of said chamber and spaced therefrom along at least the greater part of their length, said leaf spring having spaced inturned insert-locking ends adjacent the side of said chamber having the slot.

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