July 18, 1967 A. KAAS ETAL 3,331,527

RING OF PLASTIC MATERIAL HAVING RESILIENCY

Filed April 6, 1965

Fig. 1

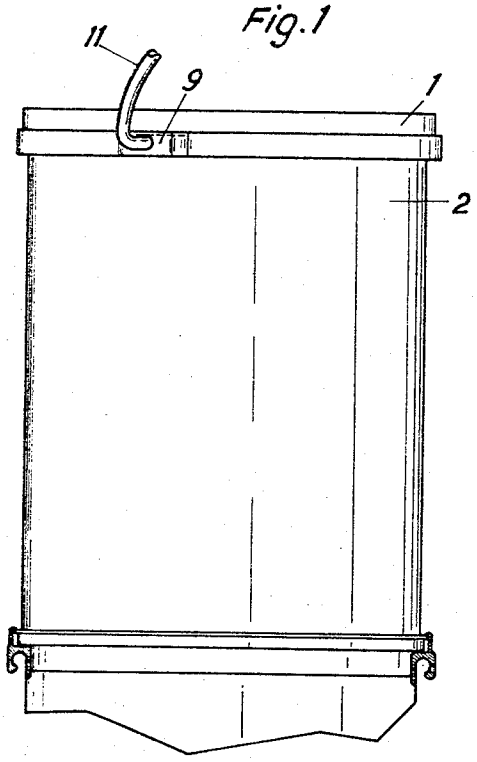


Fig. 2

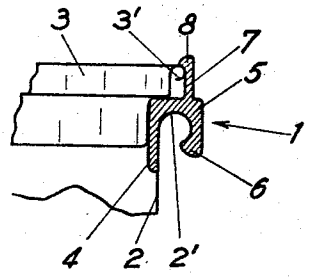
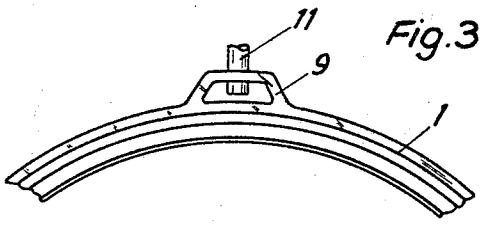


Fig. 3



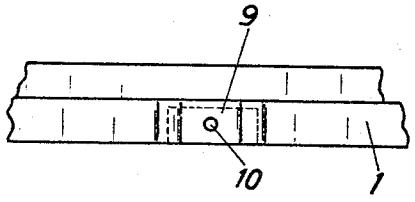
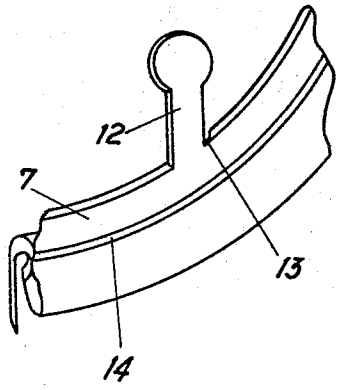


Fig. 4

Fig. 5



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RING OF PLASTIC MATERIAL HAVING RESILIENCY

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9 Claims. (Cl. 220—54)

ABSTRACT OF THE DISCLOSURE

A resilient sealing ring having a first inwardly turned hook which resiliently engages the periphery of the upper rim of a container and an upper and second inwardly turned hook which resiliently engages the periphery of the container lid.

This invention relates to a sealing ring, in general, and to a ring of resilient synthetic plastic material ensuring in combination with a lid of metal or plastic material, either opaque or transparent, or of glass or of any other suitable material, a hermetic and inviolable closure for all kinds of containers of metal, plastics material, or glass or of any other material in particular.

Containers of the bucket type and cartage pots, in particular, usually comprise, as is known, a sealing capsule or a ring which is located and secured with the aid of a bezel, the employment of which necessitates a certain manual force for opening; accordingly, the opening of this closure is sometimes not very easy. When a handle must be provided, the fixing of lugs or of any other means to the body or to the top of the container for attaching the handle is always a delicate operation in order to avoid all risks of leakage at these positions. Moreover, the actual shape of the closure must not impede stacking the containers for storage.

It is one object of the present invention to mitigate these disadvantages and these risks by providing a ring of plastic material having a resiliency necessary to allow mounting thereof by simple manual pressure on the upper rim of any container, in order to ensure in combination with the lid of the same a hermetic and inviolable closure which is easy to open, and which permits the stacking of the containers. The ring also carries members for the permanent or temporary mounting of a handle.

It is another object of the present invention to provide a ring in accordance with the above-mentioned objectives, wherein the ring has the shape and size of the upper rim of the container externally bent in a beading, and has a cross-section in the form of a hook, adapted to resiliently cover the beading while hooking therearound, and surmounted by a second hook under which is resiliently engaged the rolled rim of the lid of the container. Two lugs are provided by moulding at two opposite points of the peripheral wall of the ring, which is likewise provided with a tongue ensuring a hermetic and inviolable closure.

With the above and other objects in view which will become apparent in the following detailed description, the present invention will be clearly understood in connection with the accompanying drawing, in which:

FIGURE 1 is an elevational view illustrating two stacked containers each provided with a resilient ring represented in section on the lower container, and in elevation on the upper container;

FIG. 2 is an enlarged fragmentary view partially in section of the ring mounted on the container and holding the lid in closed position;

FIG. 3 is a fragmentary plan view of the ring showing a lug for attaching a handle;

FIG. 4 is a fragmentary elevational view of FIG. 3, and

FIG. 5 is a perspective view of a portion of the ring provided with a tongue of the closure.

Referring now to the drawing, and more particularly to FIG. 2, a closure of a cylindrical container, of metal, for example, is provided by a ring **1** of resilient plastics material having the same shape as, and for being mounted astride on an upper rim **2** of the container, which is bent around externally in order to form a bead **2'**. The ring **1** covers a lid **3** of the container, constituted, in the example, by a metal disc, of which the rim thereof is bent around in order to permit the usual recessed form but of which the outermost part is rolled into a bead **3'**.

The cross-section of the plastic ring **1** comprises a hook carrying an inner straight part **4** engaging at the interior thereof the upper rim **2** of the container and has a thickness diminishing progressively downwards so as not to impede any leakage of the contents of the container. The extremity of outer part **5** forming the hook is shaped into a bead **6**. Above the hook **5** is a vertical part **7** terminating in a bead or hook **8**, forming a second hook, under which the rolled rim **3'** of the lid is releasably engaged.

The two hooks **5** and **8**, respectively, are turned towards the interior, and, due to the resiliency of the material they are displaced to allow respectively the engagement of the ring on the bead **2'** of the upper rim of the container and the engagement under the hook **8** of the rolled rim **3'** of the lid **3**. The hooks return to their normal position to firmly hold the ring and the lid, respectively, thereby ensuring a hermetic closure of the container.

Referring now again to the drawing, and more particularly to FIGS. 3 and 4, the ring **1** is, moreover, provided during moulding with two lugs **9** (one being shown) pierced by a hole **10** to receive the extremities of a handle **11**, in a removable or permanent manner. The lugs **9** may, however, be provided in any suitable manner or be replaced by flaps or bosses or any other means permitting the attachment of a handle.

Further, the ring **1** may be provided with a tongue **12** ensuring inviolability of the closure (FIG. 5) attached on the part **7** of the ring forming the bead or hook **8**, with a recess **13** for initiating detachment by tearing this part of lesser thickness. However the part **7** may also or alternatively have a groove or cutting line **14** for cutting by a knife or any other sharp instrument.

The fixing of the plastic ring **1** on the upper rim of the container is effected by simple manual pressure, the part **4** engaging at the interior of the container and the hook **5** spreading resiliently, covering the bead **2'** and then returning to its normal position. Then the placement of the lid is effected in a similar manner, the rim **3'** engaging the hook **8** which is easily and resiliently deformed.

To the container it suffices merely to exert tension upon the tongue **12** in order to initiate the detachment by tearing of the part **7** of the ring, or to cut away this part **7** along the line **14**. The lid **3** can be easily replaced in case of partial removal of the contents of the container.

The utilization of the plastic ring according to the present invention to ensure the hermetic and inviolable closure of a container, which may have any shape and size, and which may be metallic or plastic or of glass or of any other material and of which the lid may be of the same material or of a different material, presents numerous advantages.

It facilitates the storage of the containers which it renders stackable by an economic method while avoiding all restraint or other artifice; it avoids all risk of leakage

by obviating the positioning of the members for attachment of a handle, providing the same by moulding during manufacture; and it permits the easy combination of different materials in the manufacture of the containers.

The positioning of the ring necessitates only a minor transformation of the upper rim of the body of standard containers and likewise of the rim of the corresponding lid.

Also, the ring permits the user to enclose the product in the container by a simple and natural method, a simple manual pressure, avoiding the use of a machine or of a special apparatus, to open the container in a likewise simple and natural manner, and to proceed to partial emptying, after which the lid may be replaced equally easily while restoring the hermetic sealing of the subsequent enclosure.

While we have disclosed one embodiment of the present invention, it is to be understood that this embodiment is given by example only and not in a limiting sense, the scope of the present invention being determined by the objects and the claims.

We claim:

1. The combination of a container, a peripheral external bead on said container, a sealing ring of resilient synthetic plastic material fitting tightly on said bead, and a lid fitting tightly into said sealing ring, said sealing ring comprising a web and three flanges, the first of said flanges being of tapering section and extending inside said container, the second of said flanges hooking around said bead, and the third of said flanges hooking over the margin of said lid.

2. A sealing ring in the form of a moulding of resilient synthetic plastic material, comprising an annular web, a first annular flange and a second annular flange extending approximately parallel to each other one from each edge of said web, and a third annular flange extending from said web oppositely to said first and second flanges, and two inward annular protuberances of which one extends along the free edge of said second flange and the other extends along the free edge of said third flange.

3. The sealing ring as set forth in claim 2, further comprising a flap integral with said third flange.

4. The sealing ring as set forth in claim 3, with a notch to facilitate the initiation of tearing at the junction of said flap and said third flange.

5. The sealing ring as set forth in claim 2, further comprising at least two apertured lugs.

6. The sealing ring as set forth in claim 2, with a groove to facilitate tearing along the junction of said web and said third flange.

7. A ring of resilient material for mounting pressingly on an upper rim of a container, and on a lid, respectively, said ring having a shape and size complementary to the periphery of said upper rim and comprising in cross-section a first inwardly turned hook resiliently and peripherally engaging said upper rim of said container, a second hook inwardly turned and extending above said first hook and resiliently and peripherally engaging said lid.

8. The sealing ring, as set forth in claim 7, wherein said ring further comprises means for mounting a handle thereto.

9. The sealing ring, as set forth in claim 7, wherein said ring is formed with a groove means for tearing away said second hook.

No references cited.

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