Dec. 27, 1949 H. Z. GORA 2,492,144

CAP FOR CONTAINERS

Filed Dec. 30, 1944

Fig. 1

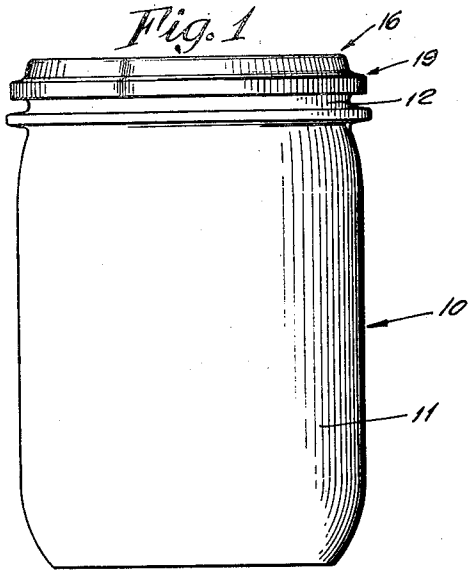


Fig. 5

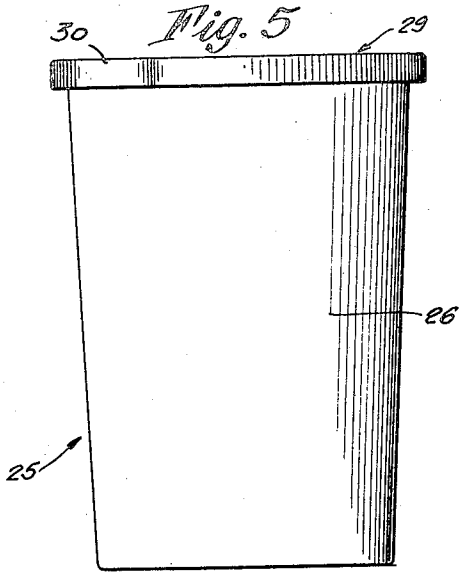


Fig. 2

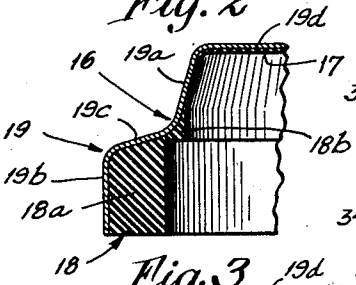


Fig. 6

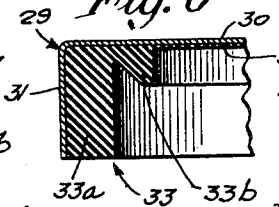
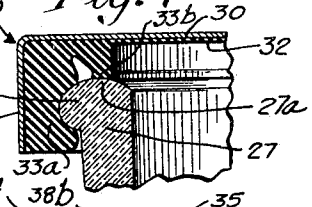
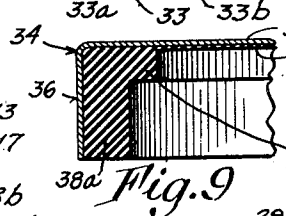


Fig. 7





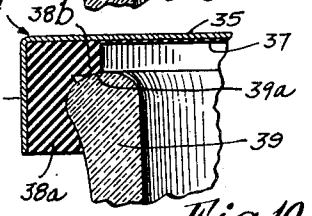


Fig. 3

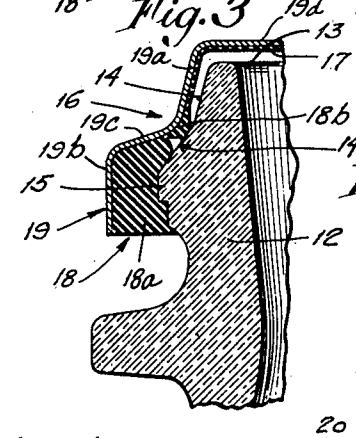


Fig. 9

Fig. 10

Fig. 8

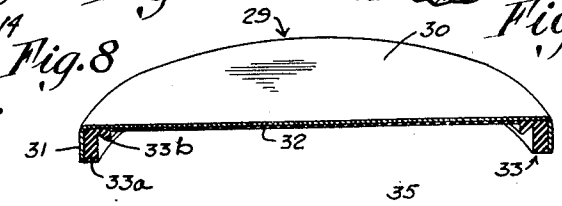


Fig. 11

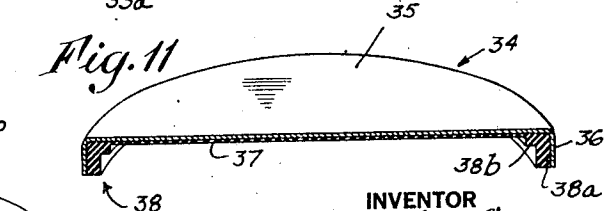
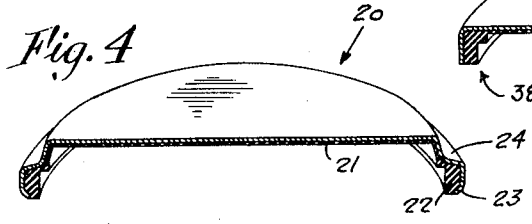


Fig. 4



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CAP FOR CONTAINERS

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Application December 30, 1944, Serial No. 570,539

9 Claims. (Cl. 215—40)

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This invention relates to lids or caps for use with containers, jars, bottles and the like. This application relates more particularly to caps of the types having flanges extending down over peripheral surfaces of the mouths of the containers, for purposes of sealing the latter.

This invention is shown herein by way of example in connection with wide-mouthed containers of the type used for food products and the like, where it is of primary importance to provide perfect sealing of the container, and perfect isolation of the material of which the cap is made from the contents of the container to prevent contamination. However, the invention is not limited to this specific use, since it also has special utility in connection with bottles for beverages and other liquids, and in connection with other containers, as for instance cans or jars for industrial liquids, paints, corrosive fluids and the like. Considering the latter where there is a possibility of a fluid attacking and destroying the material of the cap, the invention is of particular advantage in preventing such deleterious action.

Heretofore in connection with containers for foodstuffs it was common practice to coat metallic caps for the containers with lacquer or paints, so that the metal of the caps was isolated from the container contents and prevented from corroding and contaminating said contents. In some instances the metals, if bared for any reason, would have an undesirable effect on the contents of jars, imparting a metallic taste even though no corrosion was present. Usually such caps or lids, for the sake of economy, have been made of iron which corrodes very easily, and as a result it was extremely important to have a protective coating which was effective at all times to isolate the iron from the jar contents.

I have found that very often during handling of these prior caps, the coatings would become marred or scratched, especially if the sharp edges of a flange of one cap happened to come in contact with the coating of another cap. Even though the scratches might be unnoticeable they would result in a subsequent baring, and possibly in corrosion, of the metal of the cap, which would contaminate the contents of the container. If the corrosion or baring progressed sufficiently, the coating might chip or peel off and in dropping into the container mix with the contents of the latter and render same undesirable for use.

In the past the provision of such protective coatings on caps has been done in a separate

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operation. While the cost of this operation on each cap might be small, when it is considered that there are millions of caps coated daily, the total cost of the operation in time, equipment and material, becomes an important factor.

In some instances contamination of the contents of a jar would occur without apparent failure of the coating due to scratches and the like, the fault being ultimately traceable to an imperfect seal, which might be caused in some cases by a faulty coating in the region between the sealing ring or gasket and the material of the lid, and in other cases by imperfections of contact between the gasket and container surface.

The present invention obviates these difficulties and disadvantages of prior caps and lids in an effective and economical manner, by providing a cap having a resilient and tough scratch-resistant protective coating of rubber, gasket-like material covering the entire surface of the cap which might come in contact with the contents of a jar. The coating has a portion in the shape of a diaphragmatic membrane which may be formed of material similar to that used for jar-sealing rings, the membrane being preferably bonded or adhered to the inner surface of the cap to become a unit therewith. When so formed, the membrane is tough and scratch-resistant, and also resilient so that it will not readily chip or peel off, or be broken by scratching and the like. Another portion of the coating is in the form of an annulus or gasket extending along the inside of the flange of the cap, shaped to engage the container in the region of its mouth, so that a positive and effective grip upon a seal against the container is thereby provided, as well as a positive isolation of the material of the cap from the container contents. Thus there is effectively prevented the contamination of foodstuffs in a jar due to accidental exposure of same to the material of the cap, or to imperfect sealing.

In the forms of the invention disclosed herein, the gasket or annulus portion of the coating is shaped to engage the container along a plurality of separate zones in the region of the container mouth, so that at least a multiple sealing of the contents is accomplished thereby.

In one illustrated form, both the flat upper surface of the mouth edge and the outer convex surface of the container in the region of said edge are engaged by the gasket or annulus portion to form separate seals. In another illustrated form, the outer convex surface of the

container along two separate zones is engaged by the gasket portion. In both forms there is thus a double sealing engagement between the coating of the cap and the surfaces of the container, and, since the membrane portion of the coating dams or closes over the opening of the annular portion, a complete hermetic and positive sealing of the container contents, and isolation of the latter with respect to the lid material, is accomplished.

In the preferred forms of the invention shown herein the membrane is made integral with a sealing ring or gasket extending along the inside surface of the depending flange of the cap, so that the only place where the sealing of the jar relies upon pressure between contacting surfaces of dissimilar materials is at the jar mouth, and not in the lid. Since at this place the sealing ring or gasket effects a double sealing, it being under deforming compression when the cap is applied to the jar, positive assurance is had at all times of a perfect hermetic seal. The shape of the cap and gasket are such that the latter demountably secures the cap to the container, holding it in place against inadvertent removal.

Preferably one seal constitutes the means for retaining the cap on the jar while the other seal merely performs its sealing function and therefore may be formed to have a more resilient or flexible engagement with the jar than the seal which also retains, so that a close conformity of the flexible seal to the jar surface is had regardless of slight variations of the latter inherent in its manufacture.

According to the present invention the membrane and sealing ring of the cap are preferably processed by a single operation in place on the latter, and are thus bonded to the material of the cap body and flange, and there is avoided by this arrangement the necessity of employing two separate operations, one for coating the cap with lacquer or other material and the other for applying the sealing gasket. The molded sealing ring or gasket is firmly anchored to the cap in this manner, and prevented from being displaced before or during its application to the jar. Also, when reapplying the cap to the jar after it has been removed, the sealing ring is always firmly held, enabling the cap to be used as a replaceable cover until the jar is emptied or discarded.

By having the membrane and sealing ring in one continuous piece there is prevented any likelihood of liquid or food from the container lodging in back of the ring to discolor or decompose after the jar has once been opened, as is the case with caps having painted insides and separate rings.

The present invention is not limited to metal caps or lids, since it may be used with caps made of plastic or other materials. While caps of these materials may be formed to have the requisite structural characteristics, the materials of which they are made might have an adverse effect on the flavor and keeping qualities of food in containers. However, by the provision of a membrane and gasket ring made according to the invention, the contents of the containers are prevented from coming in contact with material of the lid so that the latter may not affect the contents.

Other features and advantages will hereinafter appear.

In the accompanying drawings:

Figure 1 is a side elevation of one type of container and cap to which the present invention may be applied.

Fig. 2 is a fragmentary enlarged section taken through a peripheral portion of the cap as made in accordance with the invention.

Fig. 3 is a fragmentary enlarged section taken through a portion of the mouth of the container and cap shown in Fig. 1, illustrating the double seal provided by the sealing ring of the cap.

Fig. 4 is a diametric section of a modification of the cap shown in Figs. 1, 2 and 3.

Fig. 5 is a side elevation of another type of container and cap to which the present invention may be applied.

Fig. 6 is a fragmentary enlarged peripheral section of the cap of Fig. 5.

Fig. 7 is a fragmentary enlarged section taken through a portion of the mouth of the container and cap shown in Fig. 5, illustrating the double seal provided by the sealing ring of the cap.

Fig. 8 is a diametric section of the cap shown in Figs. 5, 6 and 7, made in accordance with the invention.

Fig. 9 is an enlarged fragmentary peripheral section of a cap illustrating another form of the invention.

Fig. 10 is an enlarged fragmentary section taken through a portion of the mouth of a container having the cap of Fig. 9, and

Fig. 11 is a diametric section of the cap shown in Figs. 9 and 10.

In the packing of food products such as preserves, jellies, prepared foodstuffs, and the like for consumption at a later date, containers are commonly employed which are adapted for use with peripherally-flanged, press-fitting lids or caps. These caps are generally provided with gasket rings extending along the insides of the flanges for engagement with the mouths of the containers to securely demountably retain the caps on the containers and seal the contents of the latter so that they are air-tight.

Referring to Figs. 1 and 3, a jar 10 of such type is shown comprising a body 11 and mouth portion 12. As shown in Fig. 3, the mouth portion 12 has a flat top edge 13, a generally conical outside peripheral surface 14 and an annular rib 15 which latter cooperates with the gasket of the cap to seal and make air-tight the container and also removably hold the cap in place. The conical peripheral surface 14 is shaped to enable a cap to be applied to the containers by a press-fitting operation, by functioning to spread the sealing gasket somewhat as the cap is forced on.

Containers such as the jar 10 are usually employed with flanged caps made of metal, these caps having rubber or rubber composition rings or gaskets extending along the inner surfaces of the flanges for engagement with the retaining and sealing ribs of the jars. During application of such a cap to a filled container the ring extending along the cap flange is compressed and deformed so that it embeds the retaining rib, providing an air and liquid-tight seal. The caps are usually applied with a downward pressure, and in some cases after the cap has been forced into place the depending flange is curled inward to more effectively seal the container and retain the cap thereon.

Prior to this invention the underside of the caps have been coated in a separate operation with lacquer, or paint, so that the metal of the cap is not directly exposed to the action of the container contents or of the trapped air under the cap which might otherwise ultimately cause corrosion

of the metal and contamination of the said contents. After the coating, a ring or gasket is applied to the cap, its purpose being to hermetically seal the container. Such procedure, however, has not always proved satisfactory in practice, as above pointed out. The disadvantages and undesirable characteristics of these prior caps are obviated by the present invention.

According to this invention in the preferred forms illustrated herein, the entire inner surface of a cap 16, Figs. 2 and 3, instead of having an exposed coating of lacquer or paint, which is particularly susceptible to scratching, is provided with a resilient and tough coating of acid-resistant and abrasion-resistant material such as rubber, natural or synthetic, or rubber-containing compound in the form of a membrane 17, and a sealing and retaining gasket 18 having an hermetic or sealing connection with the membrane and extending along the inner surface of the depending flange 19 of the cap. The gasket 18 may be of exactly the same material as the membrane 17 and may be integral therewith as shown, so that the gasket and membrane together form a unitary sealing member coated over the entire inner and undersurface of the cap 16.

In the forms of the invention illustrated herein, the gasket 18 is shaped in such a manner that it has two portions which engage the surface of the container 10 at the mouth 12 along two separate zones of contact so that a double sealing is had. One portion of the gasket, whose function is mainly to seal, has a comparatively thin section so that it may have great flexibility and thereby closely conform at all points to the surface of the container, while the other portion of the gasket, functioning both to seal and retain the cap on the container, is of thicker section, and less flexibility. This double sealing together with the membrane 17 damming the opening of the gasket, makes the container effectively air and liquid-tight. Since the gasket 18 may be integral with the membrane 17 a positive isolation of the metal of the cap 16 from the contents of the container 10 may be effected, as well as a perfect seal.

As shown in Figs. 1, 2 and 3, the invention is applied to a cap 16 having a stepped peripheral flange 19, a small-diameter portion 19*a* of which is directly connected with the body 19*d* of the cap, and a large-diameter portion 19*b* of which is joined to the portion 19*a* by a shoulder 19*c*.

The gasket 18 comprises a portion 18*a* of substantially heavy rectangular section extending along and engaging the portions 19*b* and 19*c* of the flange 19, and a portion 18*b* of lighter somewhat triangular cross-section extending along the junction line of the flange portions 19*a* and 19*c*. The gasket portions 18*a* and 18*b* may be integral with each other as well as with the skin-like membrane 17, which latter in addition to covering the underside of the body portion 19*d* of the cap, extends along the inner surface of the flange portion 19*a* as shown.

When the lid 16 is press-fitted on the container as shown in Fig. 3 the portion 18*a* of the gasket 18 engages and completely embeds the rib 15 of the container mouth, and the portion 18*b* of the gasket is engaged and compressed by the conical surface 14 of the container mouth.

The portion 18*b* of lighter cross-section functions mainly as a seal, and since it has great flexibility, it closely conforms to the surface 14 of the container regardless of variations of the latter incidental to manufacture. The portion 18*a* of comparatively heavy cross-section also seals against the rib 15, but due to its mass and the fact that it completely embeds the rib 15, it serves primarily to retain the cap in place against accidental removal. By this construction a double sealing is accomplished by the two portions 18*a* and 18*b* of the gasket.

The membrane 17 and gasket 18, both being of tough and resilient material, are not easily scratched or broken by incidental contact with the flanges of other caps or by other abrasive surfaces, and therefore there is no danger of damage to the protective coating of the lid during handling. By making the gasket 18 and membrane 17 integral with each other, the only place where the sealing of the container is dependent on engagement between two different materials is at the mouth of the container, where the latter engages the gasket. However, at this point considerable pressure exists due to the backing-up of the gasket by the flange 19 of the cap, and therefore an effective hermetic seal is provided at all times. Since the gasket 18 is joined with the membrane 17 there is no likelihood of leakage into or out of the container past the engaging surfaces of the gasket and the metal of the cap, as in caps made prior to the invention. Contamination of the contents of a container from this cause is thereby not possible.

In the broader aspects of the present invention the gasket 18 and the membrane 17 may be molded to the cap 16 in a single operation, or they may be formed as a separate integral sealing unit to be inserted in the cap at a later time. Where, as is common practice, the caps are to be discarded after having served their purpose with one particular container it may be preferable to compound the rubber material of the gasket and membrane in plastic form, and mold same directly on and to the cap so that the material is securely bonded and adhered in place.

If the gasket 18 and membrane 17 are molded to the cap 16 in a single operation there is thus eliminated the separate operation heretofore employed in coating caps with lacquer, paint, and the like before the sealing ring is applied, and a consequent saving is thereby realized from this arrangement, in addition to the improved results already mentioned.

In other instances it may be desirable or necessary to have the sealing unit comprising the gasket 18 and membrane 17 removable from the cap, and if this is the case the unit may be bonded or cemented to the cap in other ways to hold it in place.

While the present invention is shown in connection with a metallic cap 16 by way of example, it may be advantageously used in connection with caps of plastic or other material as well. Plastic materials very often have a composition adversely affecting the flavor of food, and since, according to this invention, the material of the cap is completely and effectively isolated from the contents of the container, such deleterious results may be obviated by the application of the invention to plastic caps.

As may be seen in Figs. 2 and 3, the membrane 17 of the cap 16 is comparatively thin, and I have found that a thickness of approximately .005" is satisfactory for effectively isolating the material of the cap from the contents of the container. Also by the use of a comparatively thin membrane, the gasket portion 18 of the coating is relatively free to be compressed and distorted as is necessary to enable the cap to be applied to the mouth of the container.

Such distortion, however, could not result in food or other contents of the container lodging between the gasket 18 and the metal of the cap, as is often the case with caps having separate sealing rings or gaskets wherein the distortion of the latter raises an edge and causes a crevice to be formed. Since the gasket 18 and membrane 17 may be integral, and are tough and resilient, no such crevices result from distortion of the gasket, to cause putrefaction before or after the container has been initially opened.

Another form of the invention is shown in Fig. 4. The lid 20 illustrated here is substantially similar to the lid 16, it having a membranous abrasion-and-acid-resistant coating 21 and integral stepped gasket or ring 22 which latter provides a double seal by its engagement with the container mouth. However, according to this form of the invention the comparatively sharp edge 23 of the stepped peripheral flange 24 of the cap is turned inward at an angle as shown, so that the likelihood of a person who handles the container being cut or abraded by the edge is considerably reduced.

In the forming of the lid 20 from sheet metal, the usual procedure is to blank out a circular plate of correct size from a sheet or ribbon of the metal, and draw the blank to produce the peripheral stepped flange 24. In so doing, the raw edge of the blanked plate becomes the flange edge 23, this edge being more or less rough and apt to produce scratches and cuts.

However, by turning in the flange edge 23 it is brought closer to the inside circumference of the gasket 22, and the latter is then made to cover the raw edge more or less in its entirety. The edge 23 is thus covered so that it will not cut the hands of a person handling the container, and is also protected to a considerable extent from corrosion.

In addition, the inturned edge 23 reinforces or backs-up the gasket 22 so that when the latter is engaging and embedding the retainer rib 15 of the container, a more secure retention of the cap on the container is had.

The cap 20 may be advantageously formed from sheet metal stock having prefinished surfaces. The stock may have both surfaces finished or only one surface, and in the latter case the finished surface might constitute the outside or upper surface of the cap, the unfinished surface, being coated with the membrane 17 and gasket 18, resisting corrosion as a result.

The finish of the surfaces of the sheet metal stock for the cap may be in the form of plating, as for instance, copper, nickel, or tin, or it may be in the form of a lacquer, or other coating especially adapted to withstand forming operations. In the event that the cap is made from sheet stock having both surfaces prefinished, the only portion of the cap in which the metal would be exposed is at the inturned edge 23. Since this edge is turned in and the exposed metal entirely covered by the material of the gasket 22, corrosion of the metal is largely, if not entirely prevented.

In Figs. 5 through 8 the invention is shown applied to a type of container and cap wherein the latter has a straight depending peripheral flange. This type of container and cap represents an economical shape, from the standpoint of initial tool costs, and also maintenance of the tools.

As shown, the container 25 has a generally conical-shaped body portion 26 and a mouth portion 27 including a peripheral bead or rib 28 extending around its outer surface. The cap 29 carried by the container 25 comprises a body portion 30 in the form of a flat metal plate and a straight depending peripheral flange 31 integral with the body portion 30.

According to the invention the entire inside surface of the cap 29 is covered with a tough resilient acid-and-abrasion-resistant coating comprising a skin-like membrane 32 covering the inner surface of the body portion 30, and an annular gasket 33 intimately connected with the membrane and adapted to engage the mouth of the container 25.

In this form of the invention the gasket 33 comprises a portion 33*a* of large diameter which is substantially rectangular in section, and a portion 33*b* of smaller diameter integral with the portion 33*a* and extending along the inside of the latter, adjacent the body 30 of the cap. The portion 33*b* of the gasket is shown as being integral with the membrane 32, and the entire coating is formed of a tough resilient gasket material such as rubber, natural or synthetic, or or rubber-containing composition.

Referring to Fig. 7, when the cap 29 is press-fitted over the mouth portion 27 of the container, the gasket portion 33*a* is deformed and embeds the bead 28 of the container, securely holding the lid in place against accidental removal, and sealing the container so that it is air and liquid-tight. In addition, the rib or portion 33*b* of the gasket engages the top substantially flat surface 27*a* of the container under deforming pressure, forming a second seal at this point. Thus, the gasket 33 engages the mouth portion 27 of the container along two separate zones, to effect a double seal thereby, one of the zones being the bead 28 and the other being the upper surface 27*a* of the mouth portion. Since the gasket 33 is sealed to the membrane 32 by virtue of these parts being integral, a complete isolation of the material of the cap 29 is effected with respect to the contents of the container 25 and contamination of foodstuffs in the container from such causes as imperfect sealing, corrosion of the metal of the cap 29, and contact of the metal with the said contents is thereby effectively prevented. It will be readily understood that the coating comprising the membrane 32 and gasket 33 effectively prevents corrosion of the inner surfaces of the cap 29, especially if the membrane and gasket are molded against and bonded to the cap as is preferable for many uses.

In Figs. 9, 10 and 11 another form of the invention is illustrated, in connection with caps having straight peripheral flange and containers having simple cross-sectional shapes at their mouths. The cap 34 illustrating this form of the invention comprises a body portion 35 and a depending peripheral flange 36. The inside of the cap 34 is provided with a tough and resilient coating comprising a membrane 37 and integral gasket 38, the latter having a stepped inner surface. That is, the gasket 38 has a portion 38*a* of large diameter and an integral portion 38*b* of smaller diameter constituting a shoulder, adjacent the undersurface of the body 35. The membrane 37 and portions 38*a* and 38*b* of the gasket are preferably integral with each other and molded as a unit against the inside of the lid to be securely bonded thereto, although they may be formed separately from the lid and secured to the latter at a later time by suitable adhesive if necessary,

or by the application of heat which may vulcanize the material of the coating.

As shown in Fig. 10 when the lid 34 is applied to the mouth portion 39 of a container the portion 38a of the gasket encircles the outside peripheral surface of the mouth portion 39 and conforms in shape to the latter so that a tight seal is thereby effected, and also a retention of the lid on the container. The shoulder portion 38b of the gasket engages the top flat surface 39a of the container edge and is deformed an extent as shown, the pressure and contact maintaining a tight seal at this point also.

Variations and modifications may be made within the scope of this invention and portions of the improvements may be used without others.

I claim:

1. A container having an exterior rib-like portion adjacent the mouth thereof and a closure therefor including a diaphragmatic sheet-like cap structure having a membrane of resilient rubber material covering its inside surface; and gasket means of resilient rubber material having spaced sealing portions for engaging the exterior surface of the container along two separate zones in the region of its mouth, to provide a double seal thereby, one of said portions cooperating with said rib-like portion to secure the closure to the container, said means extending along the periphery of the cap and having a sealing connection with the membrane.

2. A closure for a container, comprising a substantially flat plate having a stepped peripheral flange, the flange having a portion of smaller diameter adjacent the plate and a portion of larger diameter spaced from the plate; a skin-like coating of gasket material secured to the undersurface of the plate and to the inner surface of the portion of the flange of smaller diameter; and a comparatively thick band extending along the inside surface of the remainder of the flange, said band being shaped to engage the outer peripheral surface of the container along two separate zones in the region of the container mouth to provide a double seal thereby, and said coating and band having a sealing connection whereby the contents of the container are prevented from coming in contact with the material of the plate and flange.

3. A cap for a container, comprising a plate having a depending peripheral flange and a coating of resilient rubber material secured to the inside of the plate, said coating comprising a skin-like diaphragmatic membrane extending across and bonded to the undersurface of the plate and an annulus secured to the membrane for sealing engagement with the container, and said annulus having a circumferentially extending container-engaging shoulder whereby the annulus engages the surface of the container along two separate zones in the region of the container mouth to provide a double seal thereby, one of said sealing portions also securing the cap to the container.

4. A flanged cap for a container having exteriorly disposed projections adjacent the mouth thereof, comprising a comparatively thin diaphragmatic membrane of acid-resistant gasket material bonded to the undersurface of the cap and adapted to extend across the container mouth; and an annulus integral with the membrane and extending around the periphery of the latter and disposed within the flange, said annulus having a portion of comparatively

greater flexibility for sealing engagement along a zone adjacent the mouth of the container, and a portion of lesser flexibility for engagement with exteriorly disposed projections on the container along a zone separated from the zone of sealing engagement, to retain the cap in place on the container.

5. A closure for a container comprising a diaphragmatic sheet-like cap structure having a membrane of resilient rubber gasket material covering its inside surface; and an annulus of resilient rubber material extending along the periphery of the cap and having a sealing connection with the membrane, said annulus having a container-engaging portion of comparatively light section and great flexibility for sealing engagement along a zone adjacent the mouth of the container, and a container-engaging portion of comparatively heavy section and less flexibility for engagement with the container along a zone separated from the zone of sealing engagement, to retain the closure in place on the container.

6. A closure for a container, comprising a cap and a skin-like gasket disk having an annulus of resilient rubber material extending along the periphery of the cap and having a container-engaging portion of comparatively light section and great flexibility for sealing engagement along a zone adjacent the mouth of the container, and a container-engaging portion of comparatively heavy section and less flexibility for engagement with the container along a zone separated from the zone of sealing engagement, to retain the closure in place on the container.

7. A sealing element for use between the mouth portion of a container and a flanged cap for the container, comprising a comparatively thin diaphragmatic membrane of resilient rubber gasket material adapted to extend across the container mouth adjacent the undersurface of the cap; and an annulus integral with the membrane and extending around the periphery of the latter, said annulus having a container-engaging portion of comparatively greater flexibility for sealing engagement along a zone adjacent the mouth of the container, and a container-engaging portion of comparatively heavy section and lesser flexibility for sealing engagement with the container along a zone separated from the first-mentioned zone of sealing engagement, said portion of heavy section serving to retain the cap on the container.

8. In a flanged cap for a container having an exteriorly disposed projection adjacent the mouth thereof, an annulus of resilient acid-resistant gasket material disposed within and bonded to the flange, said annulus having a portion of comparatively greater flexibility for sealing engagement along a zone adjacent the mouth of the container, and a portion of lesser flexibility for engagement with the exteriorly disposed projection on the container along a zone separated from the zone of sealing engagement, to retain the cap in place on the container.

9. A sealing element adapted to extend over the mouth portion of a container, and be enclosed by a flanged cap for the container, comprising an annulus of resilient rubber material having an internal portion of comparatively great flexibility provided with a container-engaging face for sealing engagement along a zone adjacent the mouth of the container, and a portion of comparatively heavy section and lesser flexibility provided with an inner container-engaging face for sealing and retaining engagement

with the container along a zone separated from the first-mentioned zone of sealing engagement.

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