Aug. 13, 1935. L. C. BROOKS 2,010,912

CONTAINER AND METHOD OF MAKING SAME

Filed July 18, 1931

Fig. 1.

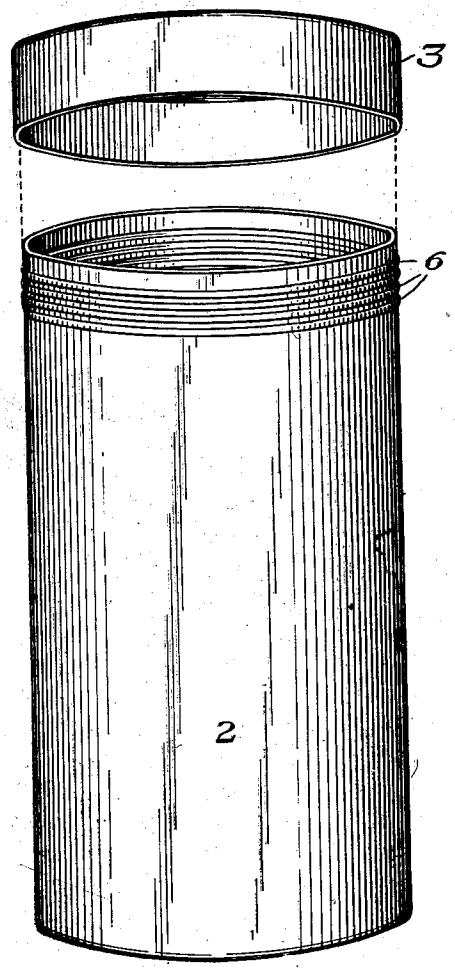
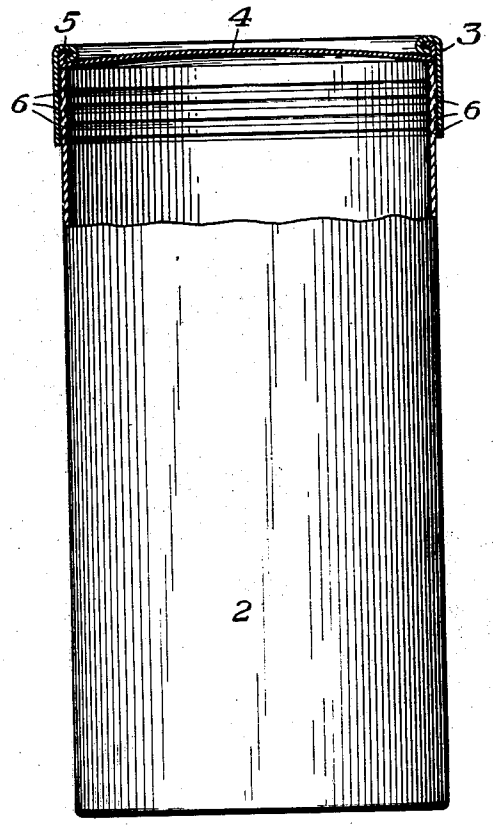


Fig. 2.



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CONTAINER AND METHOD OF MAKING SAME

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6 Claims. (Cl. 229—5.5)

This invention relates broadly to containers and method of making same, and more particularly to the provision of containers having tight closures such as will enable the handling of liquids therein without substantial danger of leakage between the body of the container and the cover. The invention still more particularly relates to the art of making fibrous containers having special provision for effecting a liquid-tight seal between the body of the container and the cover.

Various provisions have heretofore been proposed for effecting liquid-tight closure of containers without hermetically sealing the same. Among the various types of containers adapted and used extensively for purveying liquids are containers of the fibrous type made out of one or more plies of heavy paper or fibrous material. It is customary to utilize what is known as a slip cover on fibrous containers to make the same as nearly liquid-tight as possible. A slip cover, generally speaking, is a cover which fits either into or about the mouth of the container body tightly enough to be maintained firmly in place by friction and to prevent substantial leakage between the container body and cover.

In other types of containers, such, for example, as those made out of thin sheet metal, it has heretofore been customary to hermetically seal the container body and cover together or to utilize a screw cap of usual type. All of the provisions above mentioned are open to various disadvantages either by reason of poor sealing efficiency, excessive cost, or both.

One of the objects of the present invention is to provide a container having provision for tightly sealing the body of the container and cover together, which enables the obtaining of better sealing efficiency than a slip cover and is less expensive and cumbersome than a hermetically sealed container or one utilizing a screw top. The invention is well adapted for utilization in the manufacture of containers made out of various materials such as fibrous material, thin sheet metal, etc., although it has particular advantages when applied to the manufacture of fibrous containers. In the description of a present preferred embodiment of the invention to follow a container of the fibrous type has been used as an example and it is of course to be understood that the invention is in no sense restricted to the art of making fibrous containers.

I provide a container comprising interfitting members adapted to form a joint, a sealing surface of one of such members having an outstanding portion extending generally toward a sealing surface of the other, the cooperating sealing surface of the latter being relatively smooth. I further provide a container comprising a body and a slip cover therefor, a sealing surface of one only of said body and slip cover having an outstanding portion extending generally toward a sealing surface of the other whereby to provide for effective sealing of the joint.

I also provide a method of making a container, comprising providing a container member, forming adjacent the mouth of such member an outstanding sealing portion, and providing a cooperating container member having a relatively smooth sealing portion adapted to lie against the outstanding sealing portion of the first mentioned member to assist in effectively sealing such members together.

Other objects and advantages of the invention will become apparent as the following description of a present preferred embodiment thereof proceeds.

In the accompanying drawing I have shown a present preferred embodiment of the invention, in which

Figure 1 is a perspective view of a fibrous container having the cover removed; and

Figure 2 is an elevational view of the container shown in Figure 1 but with the cover in place and partly in vertical central cross-section.

Referring more particularly to the drawing, there is provided a container body **2** and a cover **3**. Both the body and cover may be formed of ordinary fibrous material spirally wound and cut into lengths and having end closures applied as well known in the art. A typical connection between the cover disc **4** and the body of the cover is shown at **5**, the extremity of the cover body and the outer portion of the disc being turned together and pressed together as shown. The bottom closure of the container body may be applied in a similar manner.

Preferably the internal diameter of the cover is only very slightly greater than the external diameter of the body so that normally the cover would be of the type known as a slip cover and would be adapted to be pushed down over the mouth of the container body and maintained in place thereon by friction.

I prefer, however, to form on the sealing surface of either the container body or the cover one or more outstanding portions, preferably slightly resilient, adapted to cooperate with a relatively smooth sealing surface of the other to assist in effectively sealing the joint between the container body and cover. In the present preferred embodiment of the invention shown for purposes of illustration in the drawing, the container body is provided with a series of outwardly pressed or embossed parallel rings **6**. Such rings are preferably formed after the tube has been wound and either before or after the bottom closure has been applied. They may be formed by an ordinary embossing die.

The rings **6** extend outwardly beyond the outer

periphery of the container body a very short distance only so that the slip cover 3 may be pressed down over the mouth of the container and over the outstanding rings, somewhat compressing such rings inwardly whereby to produce a tighter and more efficient seal than can be produced simply by a plain container provided with a plain slip cover. The axially spaced rings 6 tend to very slightly deform the inner portion of the cover and increase the pressure between the container body and cover so that direct pressure rather than static friction alone is brought to bear between the container body and the cover. Thus, a stronger closure and more effective seal is obtained than with a simple slip cover which relies substantially entirely upon static friction rather than pressure to maintain the seal.

The outstanding sealing or compression portion or portions may take various forms, although preferably extending substantially peripherally of the container. For example, instead of one or more sealing rings a continuous screw thread may be used, although a series of generally parallel rings is at present preferred, as such a provision gives excellent results. Such sealing means may be applied either to the container body or to the cover; if applied to the cover the body is preferably left substantially smooth so that practically the same result is accomplished. Substantially the same provision may easily be applied to containers made of thin sheet metal or, in fact, to any containers made of a material having an appreciable resilience.

A sealing material, such for example, as paraffine or wax is preferably applied to the sealing surface of either or both of the container and cover. Such a material is of advantage in making an absolutely liquid-tight seal, and also serves somewhat in the manner of a lubricant to render application and removal of the cover easier. The sealing material may be applied either before or after formation of the outstanding sealing portion or portions, although I prefer to apply the same before forming such portion or portions.

The sealing material has particular advantages when used on the container above described, as it is highly compressed between the body of the container and the cover, thus forming practically a 100% efficient liquid-tight seal. Also on account of the unusually high pressure exerted at the outstanding sealing portion or portions between the container and cover, the lubricating effect of the sealing material is of pronounced advantage.

The term "sealing surface" as used in the claims comprehends any surface of one container member adapted to lie opposite a portion of a cooperating container member to assist in maintaining the joint between the two.

While I have shown and described a present preferred embodiment of the invention, it is to be distinctly understood that the same is not limited thereto, but may be otherwise variously embodied and practiced within the scope of the following claims.

I claim:

1. A container comprising a cylindrical body of fibrous material and a cylindrical cover of fibrous material having telescoping engagement with the body, the body having a smooth annular surface of uniform width at its rim and with which the cover has a free sliding fit, and a sealing zone comprising a plurality of juxtaposed annular rounded bead-like parallel ribs embraced by the cover when it is completely closed, the cover and the ribs being in pressure engagement providing a plurality of annular sealing contacts between the cover and the body and an interposed sealing air pocket.

2. A container comprising a cylindrical body of fibrous material and a cylindrical cover of fibrous material having telescoping engagement with the body, the body having a smooth annular surface of uniform width at its rim and with which the cover has a free sliding fit, and a sealing zone comprising a plurality of juxtaposed annular parallel ribs pressed therein and embraced by the cover, the cover and the ribs being in pressure engagement providing a plurality of annular sealing and frictional contacts between the cover and the body.

3. The combination with a fibrous container, of a body member having a sealing zone comprising a plurality of juxtaposed annular rounded parallel bead-like ribs pressed therein in spaced relation to the rim of the body, and a fibrous cover adapted for telescoping engagement with said body, the cover being a relatively loose sliding fit with the unribbed portion of the body above the ribs and a pressure fit with the ribbed sealing zone portion thereof providing a plurality of annular sealing contacts between the cover and the body and an interposed sealed air pocket between the ribs.

4. The combination with a fibrous container, of a body member having a sealing zone comprising a plurality of juxtaposed annular parallel ribs pressed therein, and a fibrous cover adapted for telescoping engagement with said body, the cover being a pressure fit with the ribs of the sealing zone portion thereof providing a plurality of annular sealing contacts between the cover and the body and with an interposed sealed air pocket between the ribs.

5. The combination with a fibrous container body member, of a fibrous cover member having telescoping engagement therewith, one of said body and cover members having a sealing zone comprising annular parallel juxtaposed bead-like ribs pressed therein and adapted to frictionally engage the other member, such other member having a substantially uninterrupted sealing surface adapted for pressure frictional engagement with said ribs and providing sealing surfaces and a sealing pocket between the telescoped parts.

6. The combination with a fibrous container body member, of a fibrous cover member having telescoping engagement therewith, one of said body and cover members having continuous parallel juxtaposed bead-like portions pressed therein providing a fluted sealing zone adapted to frictionally engage the other member, such other member having a substantially uninterrupted cylindrical sealing surface adapted for pressure frictional engagement with said sealing zone portion and providing a plurality of pressure sealing surfaces between the telescoped parts and an interposed sealed air pocket.

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