May 6, 1958 C. M. BURROUGHS 2,833,324

CONTAINER

Filed Sept. 12, 1955

Fig. 1.

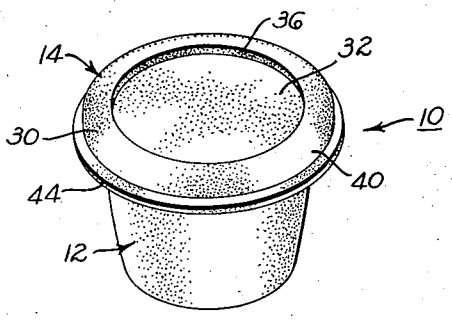


Fig. 2.

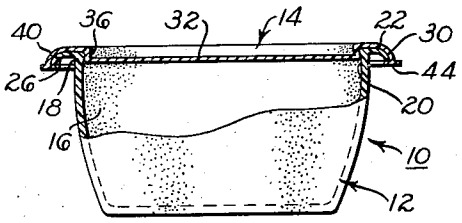


Fig. 3.

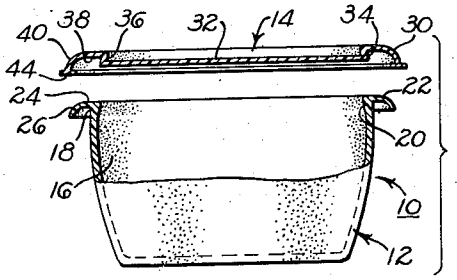
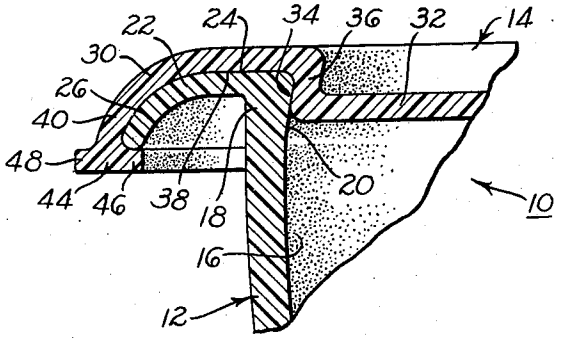


Fig. 4.



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CONTAINER

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2 Claims. (Cl. 150—.5)

This invention relates to containers, and, more particularly, to a container in which the cap may be easily attached and removed manually, yet which will maintain an airtight seal when closed although subjected to substantial pressures or vacuum.

Therefore, it is an object of the invention to provide a container, the cover of which may be manually attached to and removed from the body thereof, the attached body and cover being sealed together to withstand substantial pressure variations.

It is another object of the invention to provide a container in which the sealing portions of one or both components thereof are made of a resilient and manually deformable material, such as polyethylene or the like, so as to enable the two components to be engaged and disengaged.

It is another object of the invention to provide a container in which the sealing portions of at least one of the components thereof is a flexible material, the sealing portion of one of said components being held in engagement with the sealing portion of the other of said components under stress so that contact is made at more than one point between the sealing portions.

Another object of the invention is to provide a container in which the cover and body thereof are provided with corresponding tapered sections and with mating latching means which, when latched, urge the corresponding tapered sections into engagement. A further object of the invention is to provide such a container in which the mating latching means urge a flap of the cover into engagement with a lip of the body while urging the corresponding tapered sections into engagement.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description. The drawing merely shows and the description merely describes a preferred embodiment of the present invention which is given by way of illustration or example.

In the drawing:

Fig. 1 is an isometric view of the preferred embodiment of the invention showing the cover thereof attached to the body;

Fig. 2 is a side view of the embodiment of Fig. 1 shown partially in section;

Fig. 3 is a sectional view similar to that shown in Fig. 2, with the cover removed from the body; and

Fig. 4 is an enlarged view of a portion of Fig. 2.

A container **10** of the invention is comprised of a body **12** and a cover **14**, the two components having mating contact surfaces and means for holding these surfaces in fixed engagement when the cover is in position on the body.

The body **12** includes a substantially bowl-shaped portion **16** suitable for retaining the material which is to be placed in the container, the bowl-shaped portion having a rim **18** around the upper edge thereof. The interior surface of the body **12** at the rim **18** thereof is formed

with a taper **20** which converges in a direction away from the closed bottom of the body **12**. A lip **22** extends outward from the periphery of the rim **18**, the lip **22** preferably having a flat portion **24** adjacent the rim **18** and a downwardly curved portion **26** adjoining the flat portion **24**.

The cover **14** includes a flap **30**, so shaped as to mate with the lip **22** of the body **12**, and a central portion **32** which is displaced axially downward from the flap **30**. The periphery **34** of an axially projecting wall **36** connecting the flap **30** with the central portion **32** is tapered to correspond to the taper **20** on the rim **18** of the body **12**. The minimum distance between opposing portions of the tapered surface **20** is less than the maximum distance between opposing portions of the tapered surface **34** so that when placing the cover **14** on the body **12**, as shown in Fig. 4, one or both of the components must be temporarily deformed.

In order to contact or mate with the lip **22**, the flap **30** is provided with a flat portion **38** and a downwardly curving portion **40**. A cap **44** is formed around the edge of the curved portion **40** of the flap **30**, the cap including a portion **46** extending inward toward the center of the container to engage the outermost edge of the lip **22**. The cap **44** may also include an outwardly extending portion **48** providing an edge facilitating manual gripping of the cover.

Both the body **12** and the cover **14** of the container are preferably made of a tough, flexible material which can be temporariiy deformed without permanent injury thereto. Various plastic materials of the polyethylene type are suitable for this use. It should be noted that only one of the two components need be made of the flexible material, since, if one component is flexible and temporarily deformable, the other component may be rigidly constructed.

In attaching the cover to the body of the container, the central portion **32** of the cover is first inserted into the open mouth of the body. For some applications of the container, the resultant mating of the two tapered surfaces **20** and **34** will provide adequate sealing. Forces tending to remove the cover from the body must be sufficient to so deform the components that the interfering tapered surfaces can be moved past one another.

The tightness of the closure effected by the cover and body is improved by the latching action provided with the engagement of the cap **44** of the cover with the lip **22** of the body. After the central portion **32** of the cover has been pressed into the open mouth of the body, the flap **30** is stretched down over the lip **22** and the portion **46** of the cap **44** is hooked under the edge of the curved portion **26** of the lip **22**. The flap and lip are so dimensioned that, when engaged as described above, the flap is stressed in tension and the lip is stressed in compression, thereby producing a sealing contact between the tapered surfaces **20** and **34**, between the flat portions **24** and **38**, between the curved portions **26** and **40**, and at the engagement of the cap **44** with the edge of the lip. Thus, it is seen that an extremely tight seal is provided, the latching means insuring that the seal remains under stress and also that it is not accidentally opened. This rugged and effective seal is obtained using two components which are easily produced in large quantities using conventional materials and machinery.

Although one exemplary embodiment of the invention has been disclosed and discussed, it will be understood that other applications of the invention are possible and that the embodiment disclosed may be subjected to various changes, modifications and substitutions without necessarily departing from the spirit of the invention.

I claim as my invention:

1. A container having a mating body and cover pro-

viding an airtight closure therebetween, the body having a rim with the interior surface thereof tapering inward and toward the open end of said body, said rim having a thin, compressible, peripheral lip extending outward from the upper edge of said rim, and the cover having an axially projecting portion having a flap extending outwardly therefrom, the outer periphery of said projecting portion having a corresponding taper thereon, the minimum distance between opposing portions of said tapered interior surface of said rim being less than the maximum distance across opposing portions of said corresponding tapered outer periphery of said projecting portion of said cover, said flap having a cap around the edge thereof, said flap being extensible for hooking said cap over the edge of said lip to compress said lip, forcing said lip and flap into sealing engagement with said flap in tension and said lip in compression, and said taper on said rim engaging said taper on said projecting portion when the cover is attached to the body of the container.

2. A container having a mating body and cover providing an airtight closure therebetween, the body having a rim with the interior surface thereof tapering inward and toward the open end of said body, said rim having a thin, compressible, peripheral lip extending outward and then downward away from the upper edge of said rim providing a substantially flat upper surface adjacent said rim, and the cover having an axially projecting portion having a flap extending outwardly therefrom, the outer periphery of said projecting portion having a corresponding taper thereon, the minimum distance between opposing portions of said tapered interior surface of said rim being less than the maximum distance across opposing portions of said corresponding tapered outer periphery of said projecting portion of said cover, said flap having a T-shaped cap around the edge thereof, said flap being extensible for hooking one arm of said T-shaped cap over the edge of said lip to compress said lip forcing said lip and flap into sealing engagement with said flap in tension and said lip in compression, and said taper on said rim engaging said taper on said projecting portion when the cover is attached to the body of the container.

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