Feb. 15, 1938. C. E. PIECK 2,108,692

CONTAINER CLOSURE

Filed May 9, 1935 3 Sheets-Sheet 1

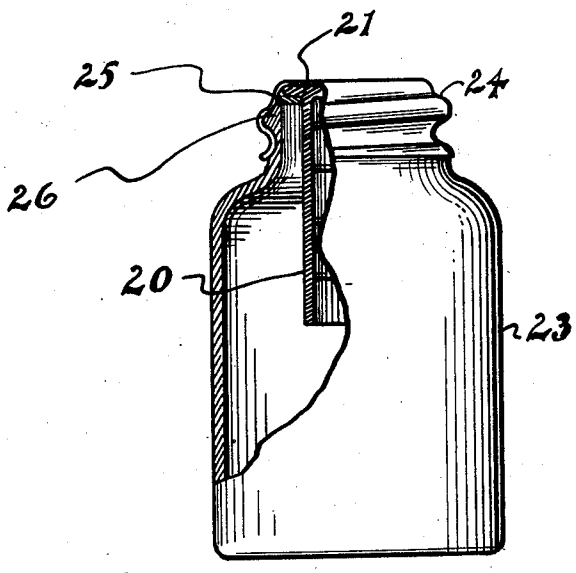


Fig. 1.

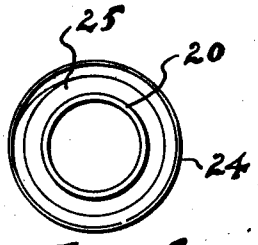


Fig. 5.

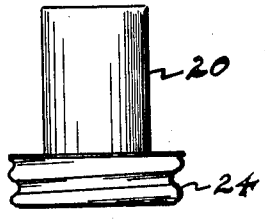


Fig. 4.

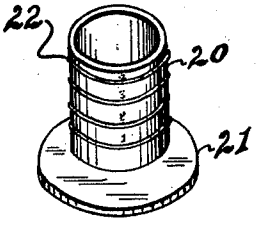


Fig. 3.

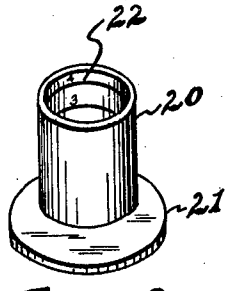


Fig. 2.

INVENTOR.
CARL E. PIECK

BY Chester Prieto

ATTORNEY.

Feb. 15, 1938. C. E. PIECK 2,108,692

CONTAINER CLOSURE

Filed May 9, 1935 3 Sheets-Sheet 2

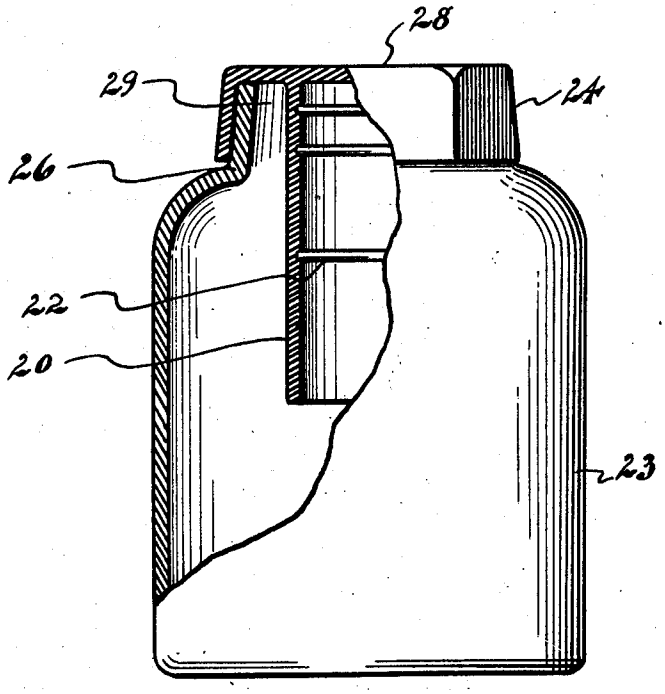


Fig. 6.

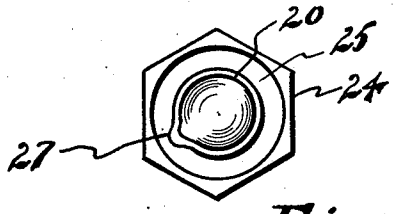


Fig. 9.

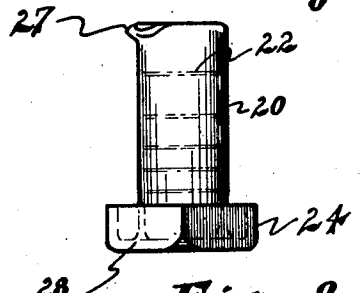


Fig. 8.

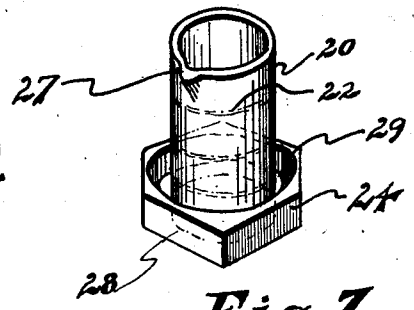


Fig. 7.

INVENTOR
CARL E. PIECK
BY Chester Tietig
ATTORNEY

Feb. 15, 1938. C. E. PIECK 2,108,692

CONTAINER CLOSURE

Filed May 9, 1935 3 Sheets-Sheet 3

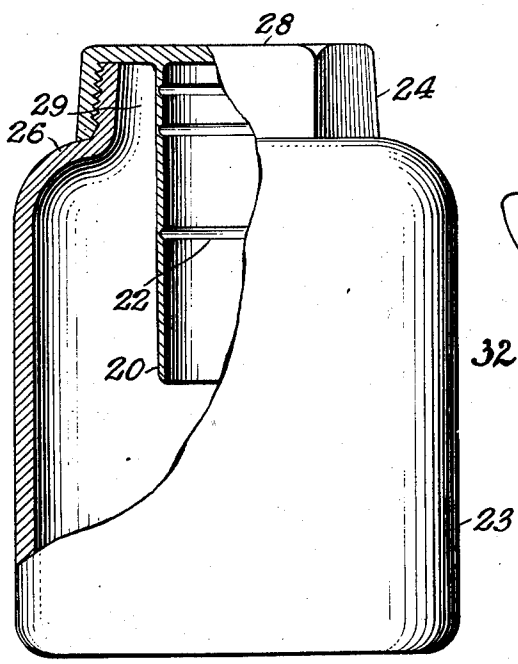


Fig. 14

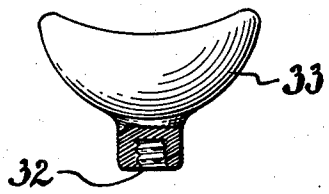
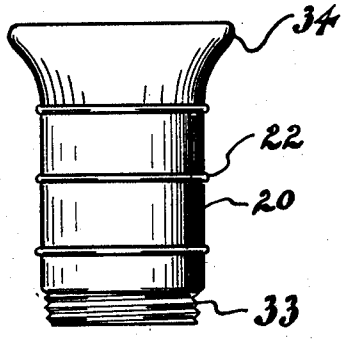


Fig. 13.



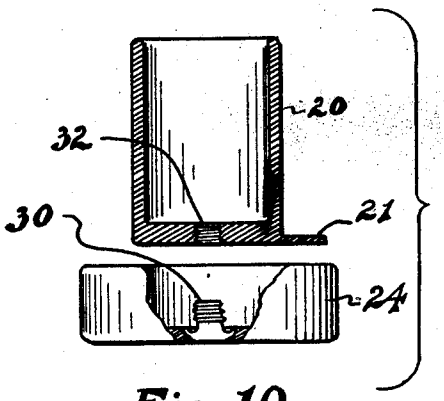


Fig. 10.

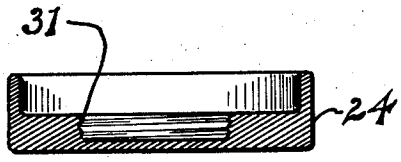


Fig. 11.

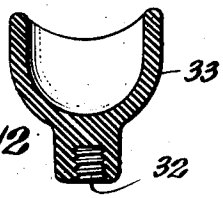


Fig. 12

INVENTOR.
CARL E. PIECK
BY Chester Prieto
ATTORNEY.

Patented Feb. 15, 1938 2,108,692

UNITED STATES PATENT OFFICE

2,108,692

CONTAINER CLOSURE

Carl Edward Pieck, Covington, Ky.

Application May 9, 1935, Serial No. 20,687

16 Claims. (Cl. 221—147)

This invention relates to a container closure. The present application is a continuation-in-part of my co-pending application Serial No. 690,611 filed September 22, 1933.

One object of this invention is to provide a combination container seal and measuring device.

Another object is to provide a device of this character which is cheap to manufacture and adapted to be executed in various synthetic plastic materials which may be flexible, transparent or both.

Another object is to provide a modification of the device which is made in interchangeable sections so that container cups of various kinds can be attached to the base or sealing portion.

Another object is to make all modifications of the device adaptable to be used with present forms of bottle—and jar caps.

Referring to the accompanying drawings:

Fig. 1 is a jar, partly in vertical section into which my device, also partly in vertical section, is fitted.

Fig. 2 is a perspective view of one form of my device shown by itself.

Fig. 3 is another form of my device in a like view.

Fig. 4 is an elevation of a jar lid in which my device is fitted.

Fig. 5 is a plan view of the subject of Fig. 4.

Fig. 6 is a view of a jar and my device similar to Fig. 1 except that the jar cap and measuring cup are integral.

Fig. 7 is a perspective view of the combination jar cap and measuring cup shown in Fig. 1, in inverted position, showing a pouring lip.

Fig. 8 and Fig. 9 are elevational and plan views of the combination cap and cup shown in Fig. 6.

Fig. 10 is a sectional elevational view of a form of cup and cap which may be attached to each other by a screw thread. The gasket shown on the right side of the figure may be omitted as on the left.

Fig. 11 is a view of a form adapted to measure powders and corresponds to Fig. 10. The cap is shown in section.

Figs. 12 and 13 are cross sectional and side elevational views respectively of an eye-cup form of container adapted to be affixed to the cap by a screw thread.

Fig. 14 is a view similar to Fig. 6 but showing the cap and measuring cup made integral with the cup of thin, flexible, transparent material and the cap provided with threads on the internal surface of its flange for cooperation with the jar threads.

The invention comprises not only the molded article such as is shown in Figs. 2, 3, 12 and 13, but also its combination, integral or separable with a jar—or bottle cap, with or without a gasket, as is shown in Figs. 1, 4, 5, 6, 7, 8, 9, 10, 11 and 14.

Referring now to Figs. 2 and 3, 20 is a cylindrical cup which is adapted to contain either liquids or solids. It is integral with a base 21 which is both thin and flexible. Either inside the cup as in Fig. 2 or on the outside thereof as in Fig. 3 is a measuring scale 22 bearing either volumetric, gravimetric or arbitrary graduations. It may be molded into the cup at the time of manufacture.

The preferred material for the piece shown in Figs. 2 and 3 is the cellulose acetate plastic known as "Tenite" made by the Eastman Chemical Company of Kingsport, Tenn. The transparent forms of this plastic are the preferred ones since their flexibility is high and the contents of the cup can be conveniently observed thru them. Other plastics, notably the urea-formaldehyde, phenol-formaldehyde, resorcin-formaldehyde and vinylite resins are also suitable. Celluloid or paraffined paper may even be used, likewise metal is permissible where no corrosion or solution would result.

In Fig. 1, 23 is a jar of the Mason type, 24 being the metal screw top thereof. Inverted in the screw top or cap is the cup 20, the base or flange 21 thereof being fitted closely against the inner surface thereof. It is to be observed that ample clearance exists between the cup 20 and the neck of the jar. A soft gasket 25 is placed over the flange 21 and around the cup 20 and makes contact between these and the upper edge 26 of the jar neck. Figs. 4 and 5 show the proportional relations of the parts clearly. It is to be noted that the gasket 25 has a tight fit between the walls of the cap 24 and the walls of the cup 20. Therefore, it is difficult to dislodge and consequently holds the cup 20 and flange 21 securely against dropping out should the entire assembly be inverted without the support of jar edge 26. As a suitable gasket material, cardboard, paper, cloth, vulcanized fiber, soft rubber or asbestos paper will serve depending upon the nature of the contents of the jar.

Referring now to Fig. 6, which corresponds to Fig. 1, the cup 20 and the cap 24 are made integral. A push fit exists between the cap 24 and the jar neck 26. As is shown in Figs. 7 and 9, the inside of the cap 24 is round to fit the jar neck 26 while the exterior is hexagonal to afford a good grip. As Figs. 7, 8 and 9 show, a pouring

spout 27 may be formed into the cup 20 at its top edge. The integral form shown in Fig. 6 may be used with or without a gasket 25. For solid contents of the jar 23 no gasket is necessary since the large tapered bearing surface between the jar neck and the jar cap is sufficient to prevent sifting. A bayonet lock may be substituted for the screw threads or the push fit. It is to be noted that the cap 24 has a flat top 28 which is adapted to act as a base when the assembly is in the position shown in Fig. 8. As will be seen from Fig. 7, the space 29 between the cup 20 and the cap 24 is adapted to act as a gutter or catch-all for any liquid or solid that may be spilled while filling the cup 20 from the main container 29. That operation is of course accomplished either by taking the cup and cap assembly in one hand while pouring out the contents of the jar with the other or by setting the cup and cap down on its base on a flat surface and then pouring the contents of the main container into it.

Referring to Figs. 10 and 11, the cap 24 in these cases may be made with an externally threaded boss 30 or with an internally threaded depression 31. This allows the cup 20 to be made separable as shown, in which case it is provided respectively with an internally threaded hole 32 as in Fig. 10 or an externally threaded base 33 as in Fig. 11. The separable construction is advantageous in producing a cheaper product since different materials may be used for the cup and cap. The cup, as shown on the right hand side of Fig. 10 may have a flange 21 or this may be omitted as shown on the left hand side. Separability has also the advantage of interchangeability of cups for the same cap. For instance the eye cup 33 shown in Figs. 12 and 13, also provided with a threaded hole can be attached to the cap 24 of Fig. 10 or the cup 20 of Fig. 11 which has a flared edge to receive powders could also be provided with a threaded hole to fit a cap with a threaded boss or the eye cup could have an externally threaded base to fit the cap 24 as shown in Fig. 11.

It is to be understood that wherever jar caps have been described in this application, bottle caps can be substituted.

Wherever an integral combination is described in this specification, it is to be understood that it may be molded in plastics, particularly those mentioned.

I claim as my invention:

1. An integral combination comprising a jar cap, a depending flange thereon, internal threads on the flange thereof, a measuring cup depending from the inner head surface thereof and equi-distant from the flange, said cup being thin and flexible, the entire combination being molded of synthetic organic resin material and adapted to seal a jar by pressure of the inner head surface of the jar cap on the top edge of the jar.

2. The combination according to claim 1 in which the entire assembly is transparent.

3. The combination according to claim 1 in which the entire combination is made of cellulose acetate.

4. The combination according to claim 1 having in addition a scale molded on the measuring cup.

5. In integral combination a measuring cup of generally cylindrical shape having a thin flexible outwardly extending flange at its base.

6. The combination of claim 5 in which the cup and flange are made of transparent synthetic plastic material.

7. The combination of claim 5 in which the cup and flange are made of cellulose acetate.

8. The combination of claim 5 in which the cup and flange are made of transparent synthetic resin plastic material having in addition a scale molded into the cup.

9. In combination, a measuring cup of generally cylindrical shape and a thin flexible flange extending outward from its base, said combination being made of substantially waterproof organic plastic material.

10. In combination, a jar cap, a downwardly extending flange thereon, an inner threaded surface on said flange, a container cup, a thin flexible flange on the base of said cup for separably joining said cap and said cup together with a press fit between said flange and said inner threaded surface.

11. In combination, a jar cap, a downwardly extending flange thereon, a container cup having an open end away from said jar cap, a thin flexible flange extending outwardly from the base of said container cup and means on the inner surface of said jar cap flange for separably joining said cap and said cup together, said means being also adapted to lock said cap to a jar.

12. In combination, a jar cap, a container cup, a thin flexible flange on said cup adapted to fit the interior of said jar cap, and a soft gasket surrounding said cup and fitting the interior of said cap closely so as to retain said cup from falling out.

13. In combination, a jar cap, a jar, a container cup having a thin flexible flange adapted to fit the interior of said cap, said cup and said flange being made of synthetic plastic material and a soft gasket fitting around said cup and over said flange and contacting closely the interior walls of said cap so as to lie between the upper edge of said jar and the interior of said cap and retain said cup in said cap by means of said flange.

14. In combination, an imperforate screw cap for a container, a thin walled cup open at the end opposite said cap and of substantially less diameter than the container neck for which the screw cap is adapted, a thin base for said cup, said base being at substantially right angles to the vertical axis of said cylinder part of the cup, the bottom surface of said base being so shaped as to fit snugly against the interior flat surface of the cap, the diameter of the base being substantially larger than the inside diameter of the jar or container neck and substantially smaller than the inside diameter of the cap, the upper surface of the base being so shaped as to fit the top edge of the container neck, thereby forming a snug fit when the cap is screwed to the container neck, said snug fit of the cup preventing damage to the cup or the container when the container receives a vibration or jar.

15. In combination, a jar cap having a substantially flat inner head surface, a depending flange, a thin flexible gasket of plastic material adjacent the said head surface, means on the inner surface of the dependent jar cap flange for locking said cap to a jar, said means extending slightly into the space enclosed by said flange, said gasket being of a diameter enabling it to extend beyond said locking means and substantially to the inner surface of said flange and a cup having a closed end adjacent said gasket and an open end away from said gasket said cup

depending when the jar is closed, from said gasket, said cup being of substantially less diameter than the area enclosed by the said flange.

16. In combination, an imperforate screw cap for a container and a measuring cup for said screw cap, said cup comprising a thin walled cylinder of substantially less diameter than the container neck for which the screw cap is adapted, a thin flat base for said cylinder, said base being substantially at right angles to the vertical axis of the cylinder, said base being of such diameter as to fit snugly against the interior of the screw cap head and to make contact with the screw cap sides whereby the cylindrical portion is held in dependent position with open end down when the container is closed, and a gasket encircling said cylindrical portion at the base thereof and lying parallel to and adjacent said thin base portion.

CARL EDWARD PIECK.