Aug. 27, 1963 T. E. BETNER 3,101,870

FILM SEALED CONTAINER WITH POURING SPOUT

Filed Oct. 12, 1960

Fig. 1

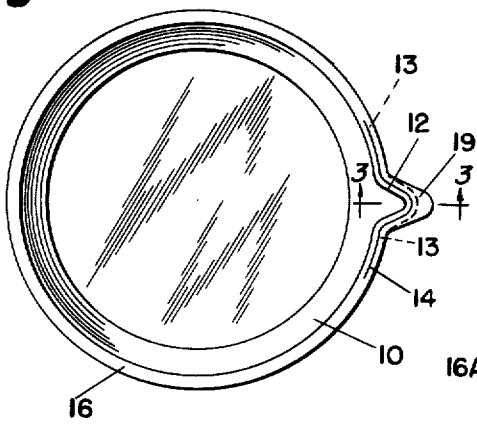


Fig. 5

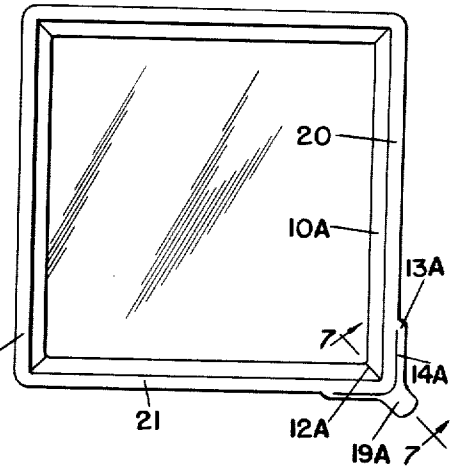


Fig. 2

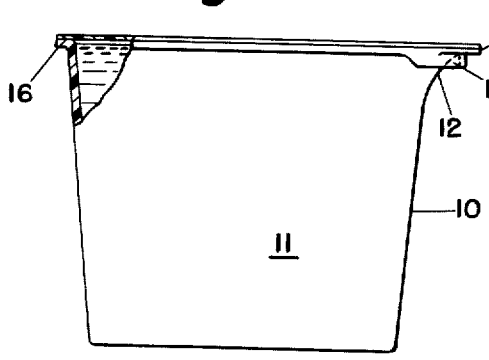


Fig. 6

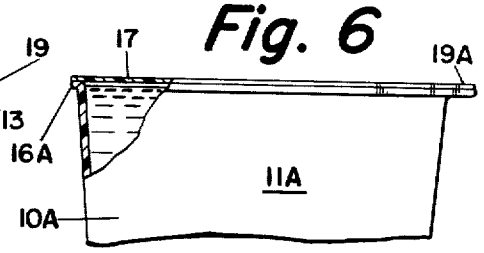


Fig. 7

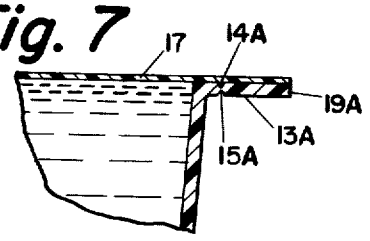
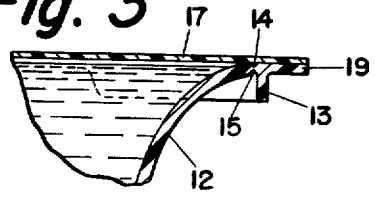


Fig. 3



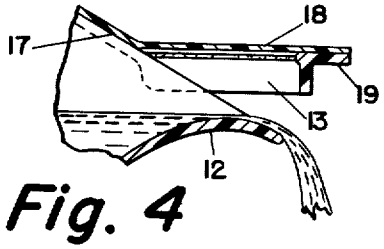
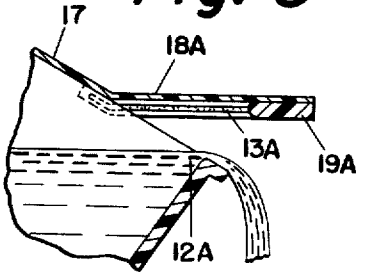


Fig. 4

Fig. 8



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FILM SEALED CONTAINER WITH POURING SPOUT

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This invention relates to sealed plastic containers having a pouring spout.

In accordance with the present invention, the open end of the plastic container body is provided with a pouring spout bounded by a local integral tear-off bead or flange. A plastic film member is peripherally heat-sealed to the top edge of the container body except along the spout where it is heat-sealed to the tear-off bead of the spout. The film thus forms a sealing cover protecting the container contents until the time for utilization of at least a portion thereof. The spout is uncovered for pouring by the tearing off of its bead or flange from the body of the container, the cover film remaining sealed to the spout's tear-off flange and to the top of the container body. The flange as torn from the spout and that portion of the film heat-sealed to the flange forms a spout cover which can be re-closed over the spout so completing closure of the container top for protection of the unused contents.

The invention further resides in plastic containers having features of novelty and utility hereinafter described and claimed.

For a more complete understanding of the invention, reference is made in the following description of embodiments thereof to the attached drawings in which:

FIG. 1 is a top plan view of a container body of the pitcher type;

FIG. 2 is a side elevational view, partly in section, of the container body of FIG. 1 with the cover film sealed thereto;

FIG. 3 is a fragmentary sectional view, on enlarged scale, of the sealed pouring spout of FIG. 2;

FIG. 4 is a sectional detail view showing the pouring spout of FIG. 3 after unsealing;

FIG. 5 is a top plan view of a container body of the carton type;

FIG. 6 is a side elevational view, partly in section, and within the lower portion omitted, of the container body of FIG. 5 with the cover film applied thereto;

FIG. 7 is a fragmentary sectional view, on enlarged scale, of the sealed pouring spout of FIG. 6; and

FIG. 8 is a sectional detail view showing the pouring spout of FIG. 7 after unsealing.

Referring to FIGS. 1 and 2, the body **10** of the container **11** is formed, as by molding, of plastic material such as polypropylene, various types of polyethylene, or the like. The open end of this pitcher-shaped container has an integral trough-shaped spout **12** bounded by a local integral tear-off flange **13** which extends downwardly from the upper edge or lip of the spout. The inner boundary of this tear-off flange is preferably defined by a groove **14** which on the upper face of the flange follows the contour of the junction between the spout and the lower face of the flange. When polypropylene or similarly tough plastic is used, it is also desirable that there be an opposed groove **15** (FIG. 3) at the junction of the spout and the lower face of the tear-off flange. The upper edge or lip of the spout **12** with its tear-off flange **13** is in the same plane as the rest of the open end of the container body. Preferably, the upper edge of the body **10** is provided with an integral bead **16** which merges with the tear-off flange **13** on opposite sides of the spout **12**.

After the container body is filled with its intended contents, such as milk, cream, fruit juice or the like, a plastic film cover **17** is applied over the open end of the container body including the open top of spout **12** (FIG. 2). Except at the spout, the film **17** is heat-sealed throughout its peripheral area to the upper face or edge of the container body; at the spout (FIGS. 2 and 3), the film **17** is heat-sealed to the tear-off flange **13** bounding the spout. The film is not sealed to the lip of the spout inwardly of groove **14**. Suitable film materials include polyethylene, polyethylene-coated cellophane and polypropylene or other films which have been treated with a heat-sealable solution. Thus, the contents of this pitcher-type container are hermetically confined and protected during shipment, storage and display by an inexpensive cover consisting only of a member of plastic film or other cheaper film treated to induce a heat-seal on bottom.

To open the container for pouring out of at least some of its contents, the flange **13** is torn from the spout **12** (FIG. 4) together with that portion of the film cover **17** sealed thereto, so uncovering only the spout. The cover film **17** remains heat-sealed to the top of the container and to the torn-off flange: i.e., the film cover remains intact in its entirety, that portion of it heat-sealed to the torn-off flange **13** now forming therewith a hinged cover **18** which can be swung downwardly to re-close the spout and so completely enclose the remaining contents of the container.

The hinge for spout cover **18** may consist only of the film material, or it may additionally include the opposite ends of the flange **13**. In the latter case, the flange grooving, when provided, does not flare outwardly at the end junctions of the flange with the container body.

Particularly when the container body as thus far described is made of polypropylene, high-density polyethylene, or similarly tough plastic, it may be difficult to tear off the spout flange **13** without first making a starting cut with a pointed knife or similar tool. To avoid such inconvenience and also to avoid possibility of injury to the person or to the container, the flange **13** may be provided at the tip of the spout with an integral outwardly extending tab **19**. When this tab is pressed sharply downwardly or upwardly, the spout is temporarily deformed and the plastic between the opposed grooves **14**, **15** is so highly stressed at the spout tip that a short snap break there occurs. By now lifting the tab **19**, the flange **13** easily and smoothly tears in both directions from the break to extent separating it from the spout and at the same time locally raises the film to uncover the spout.

The re-closable hinged spout cover **18** formed by the torn-off spout flange **13** and that portion of the film **17** heat-sealed thereto can be pressed down over the spout with the inner face of the flange frictionally engaging the outer surface of the spout lip throughout its extent. The slight irregularities or roughening of these two torn surfaces enhances their frictional engagement. With the spout cover so pressed into place, it, together with the remainder of the cover film **17** still heat-sealed to the rest of the top of the container **11**, is effective to provide and maintain a liquid-tight seal during normal handling of the container incident to its use for storage of the partially depleted original contents or for other storage purposes. In such subsequent use of the container, spout cover **18** may be easily peeled open by lifting flange **13** or tab **19** at the tip of the spout.

The carton-type container **11A** shown in FIGS. 5 to 8 is generally similar to and has the advantages discussed in connection with the pitcher-type container of FIGS. 1 to 4.

In this modification, the container body **10A** is of rectangular or other cross-sectional shape having two flat adjacent sides **20**, **21**. As will later more clearly appear, the upper corner **12A** of the container formed by these two sides provides a pouring spout. This upper corner of the container is locally bounted by an outwardly extending integral tear-off flange **13A**. Particularly when the container is made of polypropylene or similarly tough plastic, both the upper and lower faces of the flange **13A** may be grooved, as at **14A** and **15A** (FIG. 7) to define the tear-off line of the flange. In all cases, it is desirable that the upper face be grooved to define such tear-line and also the inner limit of the heat-seal between flange **13A** and the film cover **17** applied after filling of the container.

Except at the spout corner, the film cover **17** is heat-sealed to the top edge of the container body, which is preferably beaded as indicated by **16A**, to afford sufficient heat-sealing area and for stiffening purposes. At the spout corner, the film cover **17** is heat-sealed to the tear-off flange **13A** and, as in the previously described modification, is not sealed to the lip of the spout. Thus, the heat-seal between the film and the open end of the container is peripherally continuous throughout so to provide a hermetic seal protecting the milk, oil or other liquid contents of the carton during shipment, storage and display.

To open the container **11A** for the pouring out of at least some of its contents, the flange **13A** is torn from the top edge of walls **20**, **21** beginning at their junction point and extending therefrom in opposite directions for the length of the flange **13A** along such walls.

The corner spout **12A** is thus uncovered (FIG. 8) for pouring out of at least a portion of its contents. The cover film remains intact and heat-sealed to the torn-off flange and to the remainder of the top of the carton. That portion of the film heat-sealed to the torn-off flange **13** now forms therewith a hinged cover for the spout. As in the previously described modification, the hinge for the spout cover **18A** so formed may consist only of the film material or it may additionally include opposite unsevered ends of the flange **13A**.

The re-closable spout cover **18A** may be pressed back into place over the spout with the inner face of flange **13A** frictionally engaging the outer surface of the spout lip from which it was torn. The irregularities or roughening of these surfaces, due to tearing, enhance such frictional engagement. When the spout cover is so pressed back into place, it, together with the remainder of the cover film still heat-sealed to the top of the container **11A**, is effective to provide and maintain a liquid-tight seal during handling of container **11A** incident to its use for storage of the partially depleted original contents or for other storage purposes.

The tab **19A** is preferably provided with the flange **13A** at the tip of the spout to facilitate tearing-off of the flange in initial opening of the carton and to serve as a convenient handle for opening and closing the spout in subsequent re-use of the container.

What is claimed is:

1. A sealed container comprising a plastic body formed at its open end with an integral pouring spout bounded by an integral tear-off flange localized at the spout, and a plastic film overlying the open end of the body and peripherally heat-sealed to said open end thereof except at the spout where it is sealed to the tear-off flange of the spout to provide a sealed closure for the container, the tearing of the flange from the container body opening the spout for pouring out at least part of the container contents, the film remaining intact and peripherally sealed to the tear-off flange of the spout and to the container body for reclosure of the container.

2. A sealed container as in claim 1 in which the integral tear-off flange of the container body extends downwardly from the lip of the spout to facilitate starting of the tear-off of the flange and to stiffen the re-closable spout cover formed by the flange and the film remaining sealed thereto after tear-off of the flange.

3. A sealed pitcher-type container comprising a plastic body whose open top has an outward extension forming a pouring spout bounded by an integral tear-off flange localized at the spout, and a plastic film lying flat over the open end of said body and peripherally heat-sealed to the open end except at the spout where it is peripherally heat-sealed to said tear-off flange so to provide a sealed closure for the pitcher body and its spout, the tearing of said flange from the pitcher body opening the spout for pouring out of at least part of the contents of the pitcher, the tear-off flange and the portion of the film sealed thereto now forming a hinged cover for reclosure of the pitcher spout.

4. A sealed carton-type container comprising a plastic body having adjacent straight sides, an integral tear-off flange extending from the open end of said body and there locally bounding the corner formed by said sides, and a plastic film overlying the open end of said carton body and peripherally heat-sealed thereto except at said corner where it is heat-sealed to said tear-off flange so as to provide a sealed closure for the carton body, the tearing of said flange from the carton body opening said corner thereof to provide a spout for pouring out at least part of the carton contents, the tear-off flange and the portion of the film sealed thereto now forming a hinged cover for reclosure of the corner spout.

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