Aug. 7, 1962 H. M. COCHRANE ETAL 3,048,317

CLOSURE CAP FOR CUPS AND LIKE CONTAINERS

Filed Dec. 27, 1961

FIG. 1

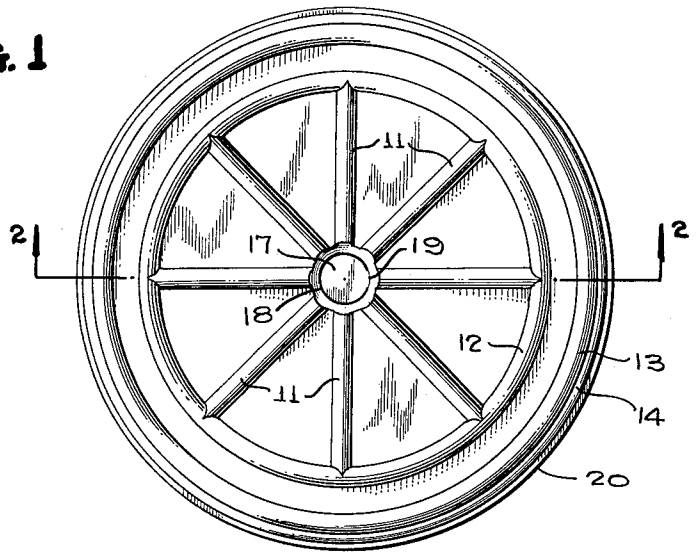


FIG 2

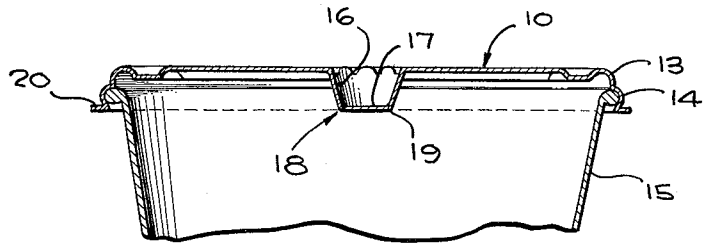
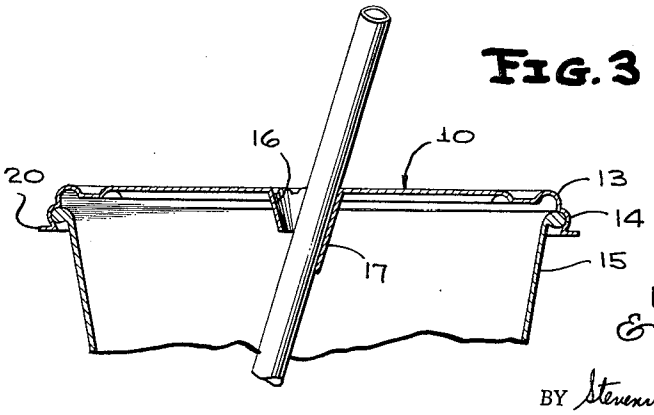


FIG. 3



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CLOSURE CAP FOR CUPS AND LIKE CONTAINERS

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4 Claims. (Cl. 229—7)

This invention relates to a closure cap for cups and like containers and more particularly to a closure suitable for use with disposable paper cups.

Closure caps of the type described having provision for the insertion of a straw have previously been proposed but have suffered from various disadvantages. In some cases a central opening has been left for the insertion of a straw but there is then the possibility of the contents spilling through this central opening. This is particularly likely to occur and the consequences are very inconvenient when a number of take-out orders are being carried. Another disadvantage has been that dust and dirt may enter through the central opening. Attempts have been made to remedy these disadvantages by providing a weakened central portion which can be pressed out to leave a central hole. This expedient results, however, in other disadvantages. When the weakened portion is pressed down some of the contents of the container are liable to spurt out. In addition, if the user attempts to push down the weakened portion with the straw the end of the straw is likely to be deformed so that it will not function properly. Another disadvantage is that in the absence of any provision for gas escape there is a danger of the closure becoming displaced due to gas pressure where, for example, the cup contains a carbonated beverage.

The foregoing disadvantages are overcome in accordance with this invention by providing an opening in the closure and an integrally formed hinged flap. This hinged flap is resiliently mounted so as normally to close off the opening but is completely severed from the remainder of the closure around the major proportion of the periphery of the flap so that the flap will pivot under the pressure exerted by the end of a straw without substantial deformation of the end of the straw.

In accordance with a further inventive feature of this invention in its preferred aspect a dependent tube is integrally formed in the closure cap and the hinged flap is located at the bottom of this dependent tube and in the same plane as the outer peripheral flange of the closure cap. This dependent tube further decreases the likelihood of spilling, and in addition the location of the flap in the same plane as the outer peripheral flange of the closure cap is a convenience in manufacture as a flat plate cutting member can be used.

In the drawings which show the preferred embodiment of this invention:

FIGURE 1 is a plan view of a closure cap in accordance with this invention;

FIGURE 2 is a section view of the line II—II of FIGURE 1;

FIGURE 3 is a section view similar to FIGURE 2 but illustrating a straw inserted into the container.

Referring now to FIGURES 1 and 2 of the drawings, the closure cap is made of resilient thermoplastic material such as cellulose acetate and comprises a disc **10** which may optionally be provided with upraised radial reinforcing ribs **11** and circular reinforcing rib **12**. At the peripheral edge of disc **10** there is a dependent flange **13** having an undercut portion **14** to provide a snap-on closure for securing the closure to the disposable cup or other similar container, a portion which is shown at **15**. Flange **13** has an annular rim at its lower edge to strengthen the flange and also to facilitate removal of the closure cap. A dependent tube **16** in the shape of an inverted truncated cone is provided in the centre of disc **10**. At the bottom of dependent tube **16** there is a hinged flap **17** defined by a line of complete severance **18** which extends around the major portion of the periphery of the flap **17** to leave an integral connecting portion **19** which resiliently retains flap **17** in a normally closed position as illustrated in FIG. 2 while permitting flap **17** to be opened downwardly under the pressure of a straw as illustrated in FIGURE 3 without substantial deformation of the straw, that is to say without causing the straw to bend and without causing the lower edge of the straw to become deformed inwardly to a sufficient extent to result in a noticeable effect on the drawing characteristics of the straw.

Flange **17** lies in the same plane as the peripheral edge **20** of rim **16** to provide a considerable convenience in manufacture as a flat plate cutting member can be used to cut around rim **16** and also to cut severance line **18**.

I claim:

1. A closure cap for cups and like containers comprising a disc of resilient thermoplastic material, a dependent flange at the periphery of said disc for securing the cap to the container, a dependent tube formed in said disc and a hinged flap closing off the lower end of the dependent tube and defined by a complete severance line around the major portion of the periphery of the flap leaving an integral connecting portion which normally resiliently retains the flap in a closed position while permitting the flap to pivot under pressure exerted by the end of a straw without substantial deformation of the end of the straw.

2. A closure cap for cups and like containers having a beaded rim comprising a disc of resilient thermoplastic material, a dependent flange at the periphery of said disc having an under-cut portion for snap-on engagement with said beaded rim, a dependent tube integrally formed in said disc, a flap closing off the lower end of said dependent tube, said flap being defined by a complete severance line around the major portion of its periphery leaving an integral connecting portion which normally resiliently retains the flap in a closed position while permitting the flap to pivot under pressure exerted by the end of a straw without substantial deformation of the end of the straw.

3. A closure cap for cups and like containers having a beaded rim comprising a disc of resilient thermoplastic material, a dependent flange at the periphery of said disc having an under-cut portion for snap-on engagement with said beaded rim and an annular rim reinforcing said dependent flange, a dependent tube integrally formed in said disc, a flap closing off the lower end of

said dependent tube, said flap being defined by a complete severance line around the major portion of its periphery leaving an integral connecting portion which normally resiliently retains the flap in a closed position while permitting the flap to pivot under pressure exerted by the end of a straw without substantial deformation of the end of the straw, the peripheral edge of said rim and said flap being in one plane.

4. A closure cap as in claim 2 in which the dependent tube is in the shape of an inverted truncated cone.

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