May 21, 1963 R. S. MILLER 3,090,542

CLOSURE CAP FOR WAXED PAPER CUP

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FIG. 1.

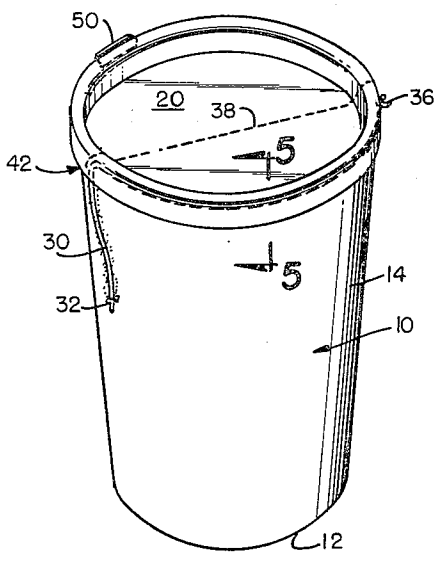


FIG. 2.

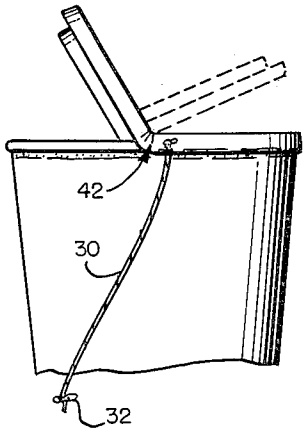


FIG. 3.

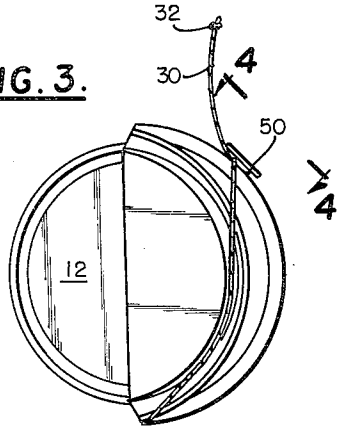
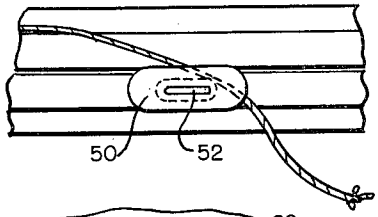


FIG. 4.



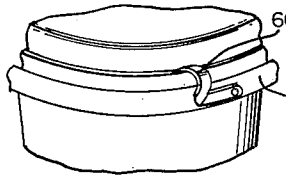
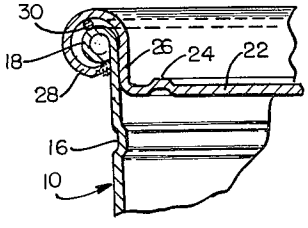


FIG. 6A.

FIG. 5.



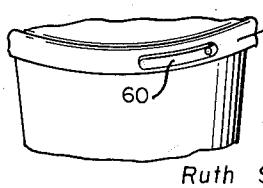


FIG. 6.

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CLOSURE CAP FOR WAXED PAPER CUP

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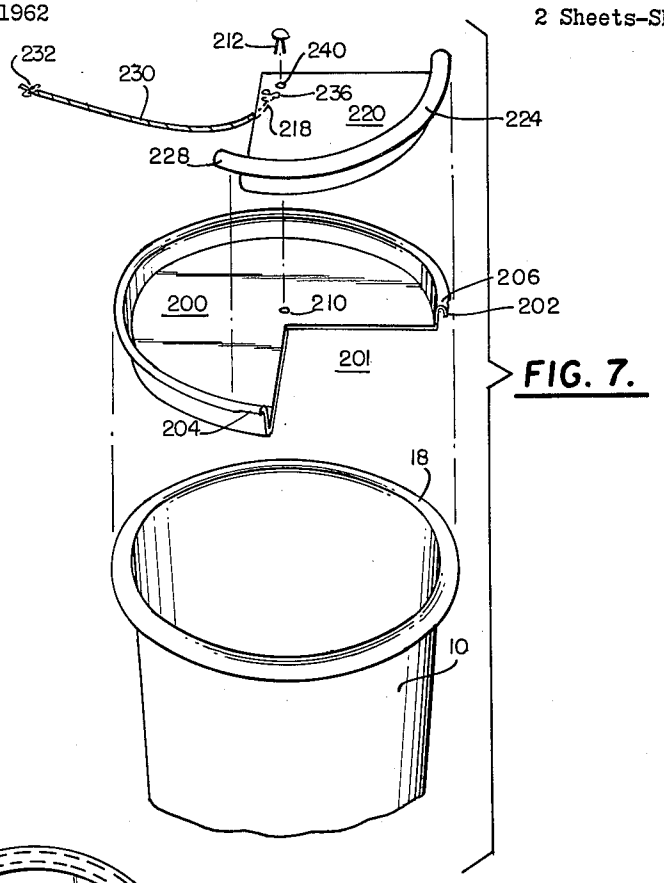


FIG. 7.

FIG. 8.

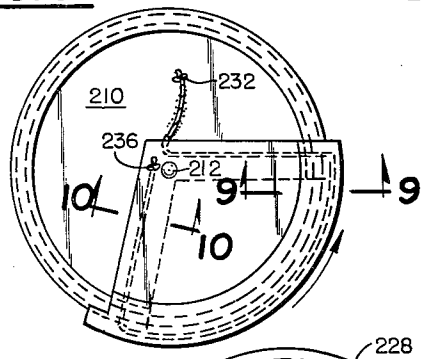


FIG. 8A.

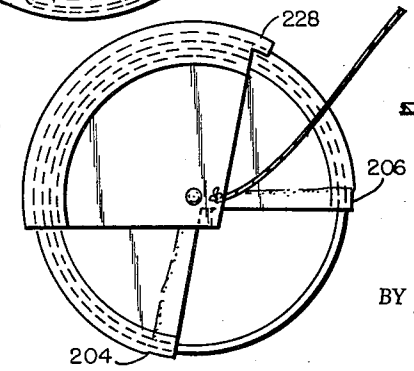
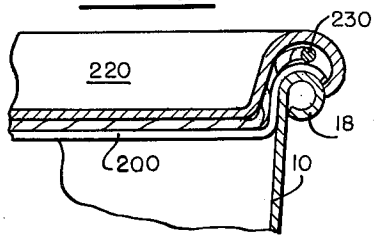


FIG. 9.



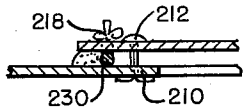


FIG. 10.

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3,090,542

CLOSURE CAP FOR WAXED PAPER CUP

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Filed July 6, 1962, Ser. No. 207,953
4 Claims. (Cl. 229—51)

This invention relates to a lid or closure cap for use on a waxed paper cup. More particularly it relates to a lid which may be used on containers or cups for the distribution and consumption of milk, fruit juices and other liquids normally imbibed by children and adults, and which may be readily restored to a closed position after a portion of the contents of the cup have been imbibed.

One object of the invention is to provide a sealed container in which liquids may be distributed without spillage or contamination, wherein the container has a lid so constructed that a person may drink the contents of the container directly from the container without having recourse to a straw, and without the necessity of first pouring the liquid into a glass or other transfer vessel.

Another object of the invention is to provide a lid or closure cap which may be opened to a limited extent so that when the contents of the container are to be imbibed while traveling in an automobile, plane, train or bus, there is less likelihood of spillage, particularly when the liquid is being drunk by a small child.

Still a further object of the invention is to provide a lid or closure cap which may be temporarily opened and which, after a portion of the contents of the container has been consumed, may be returned to a sealed condition.

Still another object of the invention is to provide a lid with the foregoing features which may be completely removed, if desired.

Still other objects will be pointed out or will become apparent from the description which follows and the drawings accompanying same, in which:

FIGURE 1 is a view showing a container prior to breaking the seal between the cap and the container;

FIGURE 2 is a view showing a container with the cap after the initial breaking of the seal and at a later stage;

FIGURE 3 is a plan view showing the closure in the dashed line position of FIGURE 2; with the cap held open by one form of latch;

FIGURE 4 is a view of a detail of the latch of FIGure 3 from plane 4—4 of FIGURE 3;

FIGURE 5 an enlarged view of a fragmentary section taken on plane 5—5 of FIGURE 1 and shows the cup and lid prior to breaking the seal;

FIGURES 6 and 6A are two views of another form of latch which may be used to hold the lid in the open position of FIGURE 3;

FIGURE 7 is an exploded view of another and preferred embodiment of closure of this invention;

FIGURE 8 is a plan view of the container of FIGURE 7 after the lid has been closed and sealed;

FIGURE 8A is a similar view after the seal has been broken and the lid has been opened;

FIGURE 9 is a section taken on plane 9—9 of FIGURE 8;

FIGURE 10 shows a detail of the manner in which the parts of the closure of FIGURES 8–10 are secured to one another.

In the drawings a conventional waxed cup 10 of the type commonly used for dispensing milk through retail outlets or other hot or cold beverages at carry-out counters consists of a base 12 (perferably circular) and upstanding sidewalls 14 reinforced by one or more encircling crimps or ribs 16 and terminating in an upper rolled

edge 18 which is commonly provided in order to strengthen the container and diminish the possibility of tearing the container and for increased comfort for the consumer. Since the cup itself does not constitute the novelty of the present invention, any of a host of commercially available containers may be utilized with the closure, lid or cap constituting my invention.

In the embodiment shown in FIGURES 1–5, the cap 20 is formed from a blank of the same material as the container which is preferably a heavily waxed carton-grade of paper, and has the same general shape as the opening in the top of container 10 in which it is to be received. That is, the lid 20 is circular, or it may be oval, elliptical, square, rectangular or of any other configuration provided that it mates with the open end of the container.

The lid comprises a central base portion which may be flat but which is preferably embossed with one or more circular ridges 24 for reinforcement of the lid. Along the periphery of its base portion, the lid is formed with upstanding walls 26 which permit it to be inserted in the opening at the upper end of the container 10. The foregoing are conventional in lids and may be varied in any manner not inconsistent with the specific features about to be described.

In accordance with the present invention, lid 20 is provided with a plurality of means which permit the user to open the cup partially and to drink therefrom. These means consist of several principal elements which cooperate to effect the desired result; the individual elements being:

(*a*) A seal tightly closing the joint between cup and lid;

(*b*) A string, wire or tape utilized to break the seal;

(*c*) A score line and extension thereof which facilitates bending of the lid to open the same;

(*d*) A catch to which the loose end of the string or other tearing means may be secured;

(*e*) A catch which may be used to hold down the free edge of the lid;

(*f*) A piece of paper which fits in the lid and on which either advertising or instructions for opening the cover, or other printed or decorative matter may be displayed.

As best seen in FIGURE 5, lid 20 forms a tight seal with the cup 10 as a result of the final operation performed after the lid has been inserted in place as a cover on the container, namely a bending over of the peripheral portion of lid 20 over rolled edge 18. Before this, string 30, or other tearing means has been laid within the confines of the rolled edge of the lid e.g. by application of an adhesive. One end of string 30 passes outwardly through the lid as shown in FIGURES 1 and 2 and is knotted at 32, the knot being provided to assist the user in obtaining a firm grip on the string. When the opposite end of string 30 is pulled, knot 32 prevents the string from slipping back inside the channel formed by the mating rolled edge of the cup and the turned down flange of the lid. The other end of 34 of the string 30 is also knotted at 36 and is fixed to the opposite side of the cover by a spot of glue or other suitable adhesive.

String 30 extends halfway around the cup, in the space between the flange in lid 20 and the beaded edge of the cup, from knotted end 32 to knotted end 36. The ends of string 30 are each adjacent to one end of a score line 38 extending across the underside of the lid 20 of cup 10. Score line 38 is a chord, offset from the center of the lid an amount sufficient for the bent back portion of the lid, for example as shown in FIGURE 6. To assist in opening the lid, a small inverted V-shaped cut 42 is taken out of the flange adjacent both ends of score line 38.

When the lid is bent back to the fullest extent, it may be held down to insure that the lid remains open while the contents of the cup are being imbibed. One form of holding means is shown in FIGURES 3 and 4 and consists of a tab **50** of cardboard or metal secured along a portion of the lid other than the portion which received the tear string. A rivet **52** or other fastening means holds tab **50** in place on the lid, offset from the flange an amount which is sufficient to permit the free end of string **30** to be wound around it as shown in FIGURES 3 and 4, thereby insuring that the bent back portion of lid **20** remains recessed in the unopened half of the lid, e.g. as shown in FIGURE 3.

Instead of the tab of FIGURES 3 and 4, which may even be integrally formed from the cap blank, it is also possible as shown in FIGURE 6 to use other closure means, for example a metal tang **60** riveted to the top of the flange of cap **20** may be used, the tang being bent over onto the folded back portion when it is desired to hold the cap in the open position.

FIGURES 7–10 illustrate a preferred embodiment of the invention. As best seen in FIGURE 7 the lid is formed of a main body portion **200** of the same general shape as that of cap **20**, except that a pie shaped sector **201** has been cut away from the cap. Cap **200** is provided with a flange **202** adapted to be curled over the beaded rim **18** at the top of cup **10** and with any desired reinforcing in the same manner as lid **20**. The end portions **204**, **206** of flange **202** are made thinner than the remainder of the flange, to facilitate the movement of the pie shaped member which fits over cut-away portion **201** when the cup is closed.

A centrally located opening **210** is provided in lid **200** to receive a rivet **212** or other means for slidably securing a pie shaped portion **220** to the remainder of the lid. Portion **220**, it will be noted is somewhat larger in area that the area of the portion cut away from lid **200**, in order to insure that a tight seal is made when the two parts of lid are later assembled in the closed position. Wedge shaped piece **220** is provided with a flange **224** adapted to seat on beaded edge **18** of the cup or to slide on flange **202**. To assist in sliding the wedge **220** along the top of the cup, an extension **228** may be provided to serve as a tab to be lifted or grasped by the user at the time that part **220** is to slide on lid **200** to assist in causing the one part to slide over the other.

A tear string **230** is knotted at one end **236** and passes through an aperture **218** in piece **229** located near opening **210**. The string is secured to the underside of lid **220** by wax or other adhesive, along a path which extends from aperture **218** inwardly radially along one edge of wedge **220** thence peripherally in the bottom of the flange **224** from one end to the other and then radially back along the other edge of the wedge **220** terminating in a knotted end **232**. Knot **232** is provided to insure that a good grip is obtained when string **230** is pulled to break the seal between the cap and the cup.

In use, the user pulls firmly on the knotted end **232** of the string and thereby breaks the seal along one edge of the wedge and then breaks the seal along flange **224** and finally along the other straight edge of the wedge. As a result piece **220** is now free to rotate about the center of the assembly and since the ends **204** and **206** of the flange **202** are tapered or bevelled, the sliding of wedge **220** on the remainder of the lid is relatively easy.

As in the case of the previous embodiment, the lid may contain an insert (not shown) on which directions may be printed, or advertising displayed or other information portrayed, said insert being adapted to fit in the exposed upper end of the lid **200**.

Having now described the invention in accordance with the patent statutes, it is not intended that my invention be limited except as required by the appended claims.

I claim:

1. A closure for waxed cups having a rolled edge about their upper open ends, comprising:

a flanged cap adapted to seat in the open end of said cup and consisting of (1) a pie shaped member having two straight sides, and a flange on said curved third side; (2) a flat round member having a peripheral flange generally similar to the shape of the rolled edge of the cup on which it seats, said round member having a pie shaped piece cut away therefrom, the area of said pie shaped member being greater than the area of the pie shaped piece cut away from said round member, said pie shaped member being disposed above said round member so as to cover the pie-shaped opening in said round member and (3) a rivet passing through both of said members and securing them to one another while permitting said pie shaped member to rotate and slide on the surface of said round member when said round member is held in engagement with the cup, the flange on said round member being thinned adjacent said cut away portion to facilitate said sliding movement;

and means for breaking the seal between said cap and said cup to permit imbibition of the liquid contents of said cup comprising a tear string knotted at both ends, having one end passing through said cap and at least a portion of the string between said knotted ends being disposed beneath the peripheral flange on said cap and between said flange and the rolled edge on said cup.

2. The closure of claim 1 wherein the tear string is affixed to the underside of said pie shaped member and passes from a point near the intersection of the straight sides, along one of said sides, thence along the curved side and thence along the other of said straight sides to a point adjacent the point at which it originated.

3. The closure of claim 2 wherein is a tab provided at one end of the curved side of said closure.

4. A closure for waxed cups having a rolled edge about their upper ends, comprising:

a flanged cap adapted to seat in the open end of said cup, said cap having a peripheral flange crimped over the rolled edge of said cup to provide a tight seal between said cup and said cap;

means for breaking said seal to permit imbibition of the liquid contents of said cup comprising a tear string knotted at both ends and having one end passing through said cap and at least a portion of the string between said knotted ends being disposed beneath the peripheral flange on said cap and between said flange and the rolled edge on said cup, and wherein one knotted end of said tear string is located adjacent to the periphery of said cap and a score line is provided on the inner surface of said cap, said score line extending from a point adjacent to said knotted end across the underside of said cap and a notch cut away from the downwardly extending portion of the flange at each end of said score line, constituting an extension of said score line;

and a fastener secured to the flange of said cap and spaced therefrom an amount sufficient to permit the free end of the said tear string to be laid across that portion of the cap which is bent back when the seal is broken and the cap is bent along the score line, and then wound around a post supporting said fastener, whereby the bent back lid is maintained in an open position.

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