March 23, 1937. H. CAREW 2,074,325

CONTAINER AND CLOSURE CAP THEREFOR

Filed Jan. 11, 1935 2 Sheets-Sheet 1

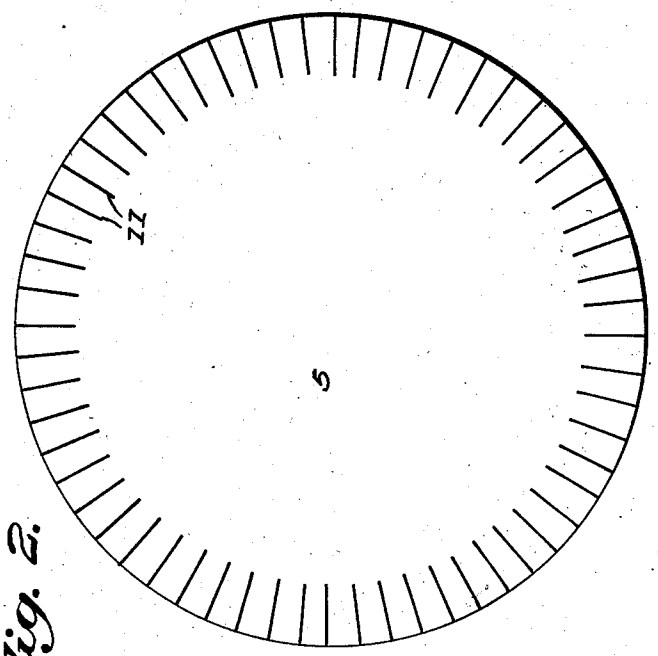


Fig. 2.

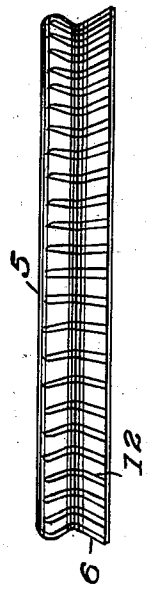


Fig. 3.

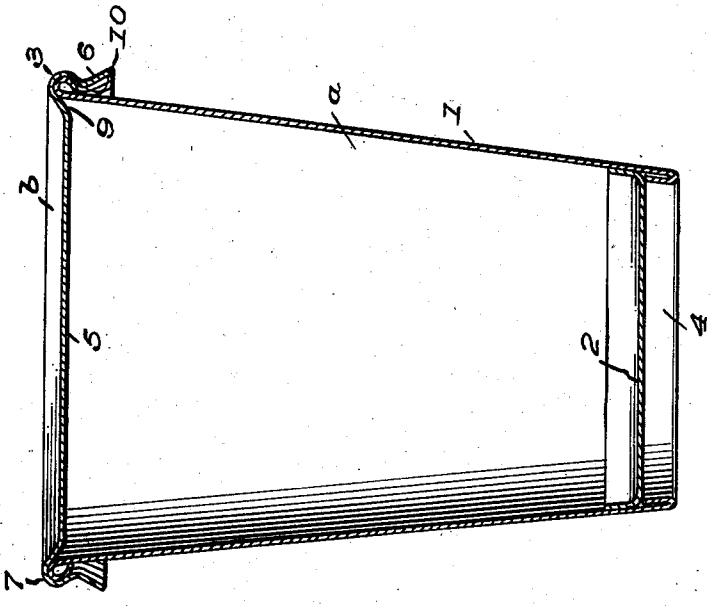


Fig. 1.

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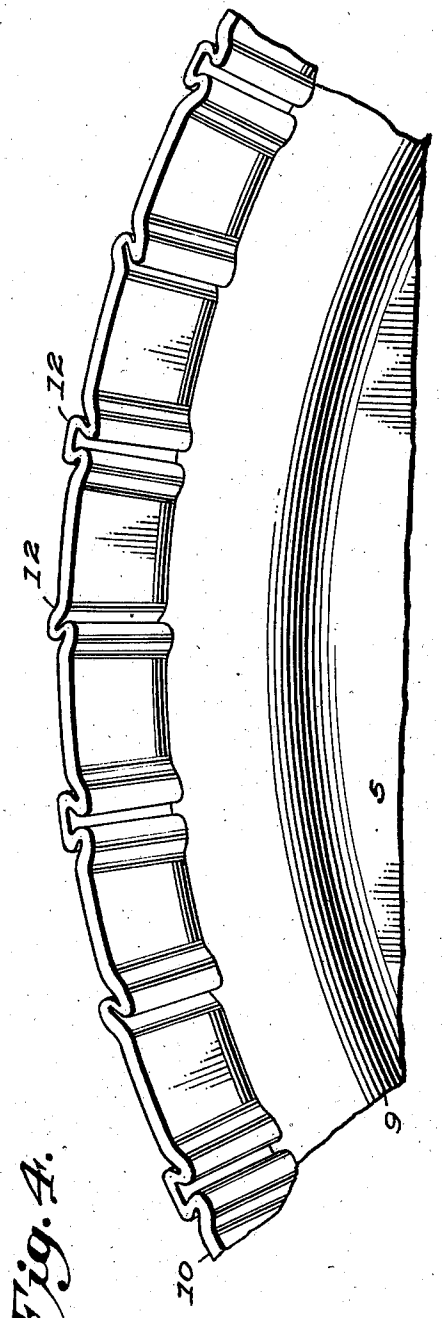


Fig. 4.

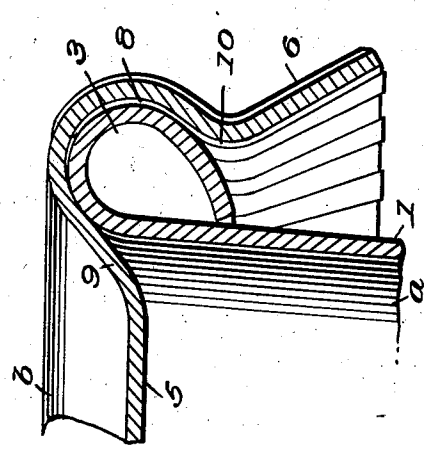


Fig. 5.

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UNITED STATES PATENT OFFICE

2,074,325

CONTAINER AND CLOSURE CAP THEREFOR

Herman Carew, Easton, Pa., assignor to Individual Drinking Cup Company, Inc., Easton, Pa., a corporation of Pennsylvania

Application January 11, 1935, Serial No. 1,420

11 Claims. (Cl. 229—5.5)

My invention relative to new and useful improvements in a container and closure cap therefor, and more particularly to a closure cap for a readily destructible container formed of relatively thin and flexible material such as paper and primarily intended for but a single use, and in so far as there is common subject matter the present application is a continuation in part of my application filed November 27, 1931, Serial No. 577,605.

The principal object of the invention resides in the provision of a closure cap adapted to be received upon and enclose the normally open end of the container, the cap including a top portion and a depending flange or skirt, the flange being readily flexible permitting a sufficient expansion to permit the application of the cap to the container, and the top portion of the cap and the flange or skirt being formed and related to provide a groove or recess to receive a bead or flange formed around the edge of the normally open end of the container.

A further object of my invention resides in forming the flange or skirt of the cap to provide reinforcements to maintain the flange or skirt in its normal formation and while permitting flexing thereof in applying the cap to the container adding sufficient strength to prevent such distortion as would tend to provide a loose fit between the cap and container.

Another object of my invention consists in forming the flange or skirt of the cap with crimped or overlapped portions, forming the reinforcements, said crimped or overlapped portions extending vertically of the flange or skirt and to a point where the groove or recess in the cap is formed, these crimped or overlapped portions adding strength at the point where the groove or recess is formed to receive the bead or flange on the upper edge of the container.

A still further object of the invention resides in the provision of a blank from which the cap is formed, said blank being formed around its marginal edge with inwardly extending scores or indentations whereby when the flange or skirt is turned from the blank the folds or crimps will take place at the scores or indentations to provide the crimped or overlapped portions which, as previously described, extend vertically of the flange or skirt to provide circumferentially spaced reinforcements.

As a further object of the invention I provide a cap, of paper or similar material, which may be readily snapped over the normally open end of a container formed of paper or the like, said cap not only acting as a closure for the container, but protecting the edge portion thereof which might be contacted with the lips of the user. Further the closure cap is so formed as to prevent the entrance of impurities into the container.

With the above and other objects in view, which will appear as the description proceeds, my invention consists in the novel details of construction, and arrangement of parts, described in the following specification and illustrated in the accompanying drawings, and while I have illustrated and described the preferred embodiments of the invention, as they now appear to me, it will be understood that such changes may be made as will fall within the scope of the appended claims.

In the drawings:—

Fig. 1 is a transverse vertical section through a container and a closure cap positioned thereon.

Fig. 2 is a plan of the blank from which the closure cap is formed.

Fig. 3 is an edge view of the closure cap.

Fig. 4 is a fragmental, enlarged, view looking into the underside of the cap towards the bead or skirt portion thereof; and

Fig. 5 is a fragmental transverse vertical section through the upper edge portion of the container and the closure cap positioned thereon.

In the drawings *a* indicates generally the container formed of relatively thin paper or similar material and *b* indicates the closure cap therefor, said closure cap being formed of paper or similar material and adapted to be engaged over the normally open end portion of the container. The container includes the tapered body portion 1, the bottom 2, and the outwardly directed bead or flange 3, the bead or flange being formed around the normally open mouth portion of the container while the lower edge of the body 1 is folded inwardly as shown at 4 beneath the bottom 2.

The closure cap *b* includes the top portion 5 and outwardly flared flange or skirt portion 6 connected by the circumferentially extending bead 7 forming an interior circumferentially extending groove or recess 8, the bead 7 being formed by the upwardly extending portion 9 of the top and the groove or recess 8 being positioned between said upwardly extending portion 9 and the skirt or flange portion 6. The outward flare of the flange or skirt 6 forms an inwardly directed circumferentially extending rib 10 forming a restricted passage at the point where the bead 7 connects with the skirt 6, said inwardly directed rib 10 being of less circumference than

the bead 3 formed around the normally open end of the container thereby necessitating a slight flexing of the skirt 6 and bead 3 as the cap is applied to the container, it being understood that when the cap is applied that the bead 3 of the container will be received within the groove 8 formed by the bead 7.

The closure cap is formed from a blank of the formation shown more particularly in Fig. 2 of the drawings, the blank being circular in form and provided around its marginal edge with circumferentially spaced inwardly extending scores or indentations 11. As the flange or skirt 6 is turned folds or crimps will take place at the scores or indentations 11 to provide circumferentially spaced overlapped portions such as are shown at 12 more particularly in Fig. 4 of the drawings and, as shown, these overlapped portions are not of uniform character but take up the surplus material in the flange or skirt 6, it being understood that when the flange or skirt is turned there will necessarily be some surplus material due to the reduction in diameter. The overlapped portions 12 will extend vertically of the flange or skirt 6 and are of such a height as to extend from the lower edge of the flange or skirt to the upper surface, or approximately to the upper surface, of the bead 7 thereby reinforcing the flange or skirt 6 as well as the bead 7. The overlapped portions 12 tend to hold the flange or skirt 6 and bead 7 in their normal formation, but will permit sufficient flexing thereof to allow the closure cap to be positioned over the normally open end of the container.

From the above detailed description it is thought that the construction will be clearly understood. It will be seen that I have provided a closure cap, formed of paper or similar material, which is adapted to be placed over and enclose the normally open end of a container which is also formed of paper or similar material and by reinforcing the skirt or flange 6 of the closure cap as well as the bead 7 the cap will snugly engage the container and such flexing as is necessary in applying the cap to the container will not distort the flange or skirt, and the bead 7 as to prevent snug engagement of the cap with the container. The overlapped portions 12 further have a tendency to return the flexed flange or skirt to its normal position after application to the container. The outward flare at the bottom of the flange or skirt 6 will guide the closure cap over the normally open end of the container and as the bead 3 of the container engages the inwardly directed rib 10 it will flex the skirt or flange 6 outwardly to permit the bead 3 to pass into the groove 8 formed interiorly of the flange or skirt and the bead 3 of the container will be positioned, as shown more particularly in Figs. 1 and 5 of the drawings between the inclined portion 9 of the cap and the skirt or flange 6. The closure cap as well as the container being formed of flexible material such as paper permits sufficient flexing between the parts to permit the application of the cap over the end of the container but at the same time permitting close engagement of the cap with the container. It will be understood that the overlapped portions 12 will be pressed tightly together and Fig. 4 of the drawings shows a greatly enlarged section. Although pressed relatively flat nevertheless the overlapped portions will provide slight vertical projections or ribs both interiorly and exteriorly of the flange or skirt 6, the interior projections or ribs being engaged by the bead 3 of the container as the cap is applied.

A closure cap such as is described may be easily applied to the container and at the same time protects the lip of the normally open end of the container against the accumulation of impurities thereby having advantages over the well-known form of disc closure inserted into the normally open mouth of a container.

Having fully described my invention what I claim as new and desire to secure by Letters Patent is:—

1. The combination with a receptacle having a resilient lip portion formed by beading the upper edge to present an outwardly extending rounded surface projecting laterally of the side of the receptacle, of a closure cap adapted to be applied to the receptacle, said cap including a top portion, a flexible skirt portion depending below the top portion and having circumferentially spaced reinforcements, and an outwardly extending bead connecting the top and skirt portions, the outwardly extending bead forming an interior groove at the juncture of the top and skirt portions to receive the beaded lip portion of the receptacle.

3. The combination with a receptacle having a resilient lip portion formed by beading the upper edge to present an outwardly extending rounded surface projecting laterally of the side of the receptacle, of a closure cap adapted to be applied to the receptacle, said cap including a top portion, a flexible skirt portion depending below the top portion and having circumferentially spaced reinforcements formed by overlapped portions of the skirt, and an outwardly extending bead connecting the top and skirt portions, the outwardly extending bead forming an interior groove at the juncture of the top and skirt portions to receive the beaded lip portion of the receptacle.

3. The combination with a receptacle having a resilient lip portion formed by beading the upper edge to present an outwardly extending rounded surface projecting laterally of the side of the receptacle, of a closure cap adapted to be applied to the receptacle, said cap including a top portion, a flexible skirt portion having circumferentially spaced reinforcements, and an outwardly extending bead connecting the top and skirt portions, the reinforcements of the skirt portion extending around a portion of the outwardly extending connecting bead and the outwardly extending bead forming an interior groove to receive the beaded lip portion of the receptacle.

4. The combination with a receptacle having a resilient lip portion formed by beading the upper edge to present an outwardly extending rounded surface projecting laterally of the side of the receptacle, of a closure cap adapted to be applied to the receptacle, said cap including a top portion, a flexible skirt portion having circumferentially spaced reinforcements formed by overlapped portions of the skirt, and an outwardly extending bead connecting the top and skirt portions, the reinforcements extending around a portion of the connecting bead and the outwardly extending connecting bead forming an interior groove to receive the beaded lip portion of the receptacle.

5. The combination with a receptacle having a resilient lip portion formed by beading the upper edge to present an outwardly extending rounded

surface projecting laterally of the side of the receptacle, of a closure cap adapted to be applied to the receptacle, said cap including a top portion, a flexible skirt portion depending below the top portion and having circumferentially spaced reinforcements formed by overlapped portions of the skirt, and an outwardly extending bead connecting the top and skirt portions the outwardly extending bead forming an interior groove at the juncture of the top and skirt portions to receive the beaded lip portion of the receptacle and the overlapped reinforcing portions of the skirt providing interior and exterior vertically extending ribs or projections.

6. A closure cap including a top portion, a flexible skirt portion extending below the top portion and having circumferentially spaced reinforcements and an outwardly extending bead connecting the top and skirt portions and forming an interior circumferentially extending groove at the juncture of the top and skirt portions.

7. A closure cap including a top portion, a flexible skirt portion extending below the top portion and having circumferentially spaced vertically extending reinforcements, and an outwardly extending bead connecting the top and skirt portions and forming an interior circumferentially extending groove at the juncture of the top and skirt portions.

8. A closure cap including a top portion, a flexible skirt portion extending below the top portion and having circumferentially spaced reinforcements formed by overlapped portions of the skirt, and an outwardly extending bead connecting the top and skirt portions, the outwardly extending bead forming an interior circumferentially extending groove at the juncture of the top and skirt portions.

9. A closure cap including a top portion, a flexible skirt portion having circumferentially spaced vertical reinforcements, and an outwardly extending bead connecting the top and skirt portions and providing an interior circumferentially extending groove, the reinforcements of the skirt portion extending partly around the connecting bead.

10. A closure cap including a top portion, a flexible skirt portion having circumferentially spaced vertically extending reinforcements formed by overlapped portions of the skirt, and an outwardly extending bead connecting the top and skirt portions, the overlapped reinforcements extending partly around the connecting bead.

11. A circular blank for forming a closure cap including a top portion and a flexible skirt portion, said blank having circumferentially spaced inwardly directed scores leading from the marginal edge, the edge portion of the blank being turned to form the skirt portion of the cap and the scores around the marginal edge of the blank facilitating the turning of the skirt portion and overlapping of the material of the blank to provide circumferentially spaced reinforcements on the skirt portion.

HERMAN CAREW.