April 19, 1938. D. B. LOGAN 2,114,395

PAPER DRINKING CUP

Filed Aug. 6, 1934

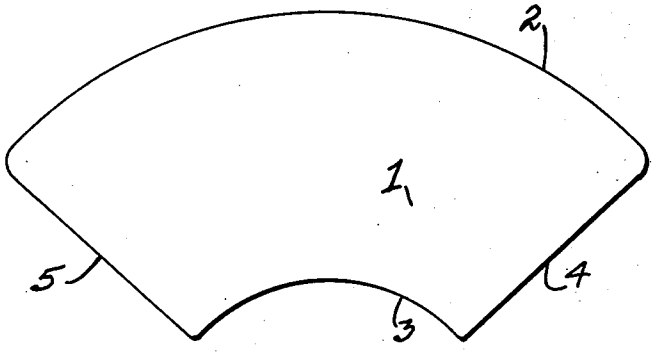


Fig. 1.

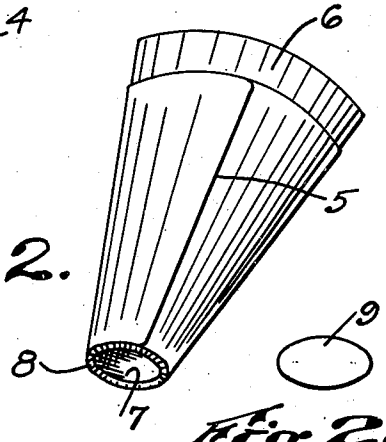


Fig. 2.

Fig. 2a.

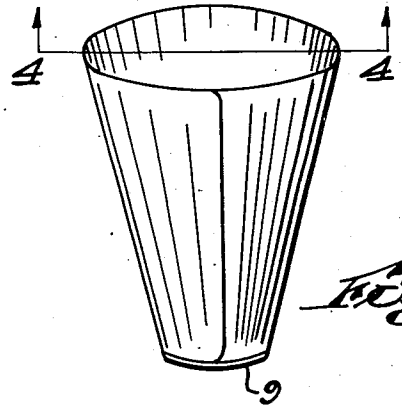


Fig. 3.

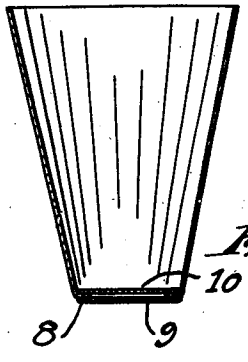


Fig. 4.

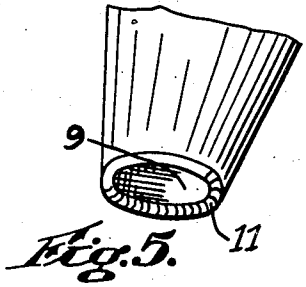


Fig. 5.

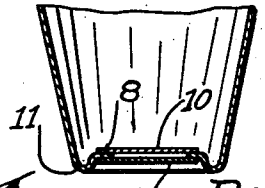


Fig. 6.

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Patented Apr. 19, 1938 2,114,395

UNITED STATES PATENT OFFICE

2,114,395

PAPER DRINKING CUP

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Application August 6, 1934, Serial No. 738,628

1 Claim. (Cl. 229—1.5)

The present invention relates to paper drinking cups of the open mouthed, tapered body type, which are adapted to be nested and stacked in a container and to be withdrawn singly therefrom as they are required for use.

Existing cups of this character, as disclosed for example in Dickerson Reissue Patent No. 17,553 dated January 7, 1930 have substantially circular or elliptical mouth openings with tapering wedge shaped bodies that are adapted to fit the hand of the user. While a cup of the Dickerson type is entirely satisfactory in use, it cannot be rested on a flat surface when filled, owing to the sharp edge which terminates the body at its closed end. Accordingly, one of the objects of the present invention is to provide a modified form of open mouthed cup which is characterized by a flat bottom, so that the cup can be rested upon its base when full, the bottom being generally elliptical in form and of such limited area that the cup body retains the tapering wedge shaped form of the Dickerson type.

Other objects of the invention are to provide a cup, the body of which conforms very closely to the space between the fingers of the user's hand when partially closed, with the flat bottom imparting stiffness to the lower portion of the cup which effectively prevents the walls from collapsing when subjected to pressure. The above and other objects of the invention will hereinafter more fully appear from the following description taken in connection with the accompanying drawing, in which:—

Fig. 1 is a plan view of a blank from which the cup is formed.

Fig. 2 is a perspective view of the blank of Fig. 1 after its formation on a mandrel, preparatory to the application of a bottom.

Fig. 2*a* is a view of a bottom disk.

Fig. 3 is a view in perspective of a completed cup.

Fig. 4 is a vertical sectional view along the line 4—4 of Fig. 3.

Fig. 5 is a perspective view looking upward at the bottom of a completed cup after the performance of a finishing operation.

Fig. 6 is a vertical sectional view of the cup of Fig. 5, on an enlarged scale.

Like reference characters refer to like parts in the different figures.

Referring first to Fig. 1, the improved cup is formed from a blank 1 generally in the form of a sector, with curved edges 2 and 3 substantially concentric, and straight edges 4 and 5, substantially radial with respect to the center of curvature of edges 2 and 3. In the formation of a cup, the blank 1 is positioned relatively to a mandrel 6 providing a rounded wedge shaped body generally elliptical in cross section throughout, and the blank is curled around the mandrel to bring its opposite edges 4 and 5 into overlapping relation. The overlapping edges 4 and 5 are secured together by suitable adhesive to form a seam extending longitudinally of the rounded cup body which is open at its lower end to provide a substantially elliptical aperture 7 bounded by an inturned flange 8 readily formed by engagement with the smaller end of the mandrel 6. The material from which the cup is formed, while flexible, is also sufficiently resilient to maintain the cup body in the open form disclosed and to cause the cup body to resume its open form independently of temporary deformations of the body during dispensing of individual cups from a supply. Substantially all of the open type of cups are formed from material having sufficient inherent resiliency to cause the cup to retain its open form, and the resiliency in the present cup construction is such as to normally cause the cup to assume a form substantially circular in cross section, from which shape the cup is distorted by the elliptical bottom.

A flat generally elliptical disk 9 having an area substantially equal to the combined areas of the aperture 7 and the surrounding flange 8 is then secured to the outside of flange 8 by suitable adhesive, and a corresponding disk 10 is placed inside the cup and secured to the opposite side of the flange 8. After the application of pressure to secure the bottom flange 8 between the two disks 9 and 10, the completed cup appears as shown in Figs. 3 and 4. This cup is particularly characterized by its wide open mouth and tapering rounded body terminating in a flat base on which the cup can stand. Obviously, the base of the cup possesses considerable strength due to the double thickness of the disks 9 and 10 which are secured to the wall of the cup by the interposed flange 8. Furthermore, the construction of the base with the turned-in flange 8 held between the disks, provides a substantially leakproof closure for the cup bottom.

As will be evident from a consideration of Figs. 2 and 3, the cup body is of such form as to fit perfectly in the hand of the user, since it naturally fills the space between the partially closed fingers, with the major axis of the elliptical body extending generally in the direction of the fingers. When filled with liquid, the cup exhibits no tendency to collapse, owing to the fact that any pres-

sure at the base of the cup will be opposed by the double thickness of the disks, which being of generally elliptical form, strongly resist any flexure. The stiffness of the cup bottom also facilitates grasping the cup when removing the same from a cabinet. At the same time, however, the relatively flexible walls of the cup above the base permit the open cup mouth to assume a generally elliptical form corresponding to that of the base. The cup base is of sufficiently large area to cause the entire cup wall to assume a form elliptical in cross section in spite of the inherent resiliency in the material of the cup wall. The base is also sufficiently large to provide a firm support for the cup, without however, being so large as to prevent compact nesting and easy dispensing of the cups individually from a stack. For easy dispensing the cup walls should taper to a substantial extent and the elliptical base is accordingly made as small as possible consistent with providing a firm support and with holding the walls in the desired elliptical shape.

In Figs. 5 and 6 there is illustrated an additional step which may readily be performed on the cup of Fig. 3, and consists of subjecting the base of the cup to a pressing operation which slightly insets the disks 9 and 10 within the body of the cup. This pressing operation also forms a bead 11 extending around the outer disk 9 which greatly strengthens the base of the cup and increases its stability when placed on a flat surface.

From the foregoing, it is apparent that by the present invention there is provided an improved open mouthed tapered body cup of the type exemplified by the aforesaid Dickerson reissue patent, which cup, however, possesses the additional advantages of providing a flat base on which it may be stood and a relatively rigid reinforced bottom which strongly resists any appreciable distortion or collapsing of the cup when in use, and renders the cup substantially leakproof.

I claim,

As a new article of manufacture, a paper cup made from a blank curled to provide a tapering body open at its ends, with the edge at the smaller end of the body turned in to provide a continuous flange, and a flat bottom composed of at least one flat elliptical disk secured to one side of the turned in flange, said flat elliptical bottom being only large enough to impart an elliptical form to the open mouth of the cup.

DONALD B. LOGAN.