

UNITED STATES PATENT OFFICE.

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PAPER CUP.

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To all whom it may concern:

Be it known that I, ERNEST R. HUNTLEY, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a certain new and useful Improvement in Paper Cups, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to paper cups and its object is the production of a cup of improved construction, with a view to greater sturdiness, from a circular blank. With this object in mind, I combine with a turned over edge or rim a particular type of fold or plait in the wall of the cup and the edge or rim, so that a staggered relationship is effected between the weakest points in the wall and those in the edge or rim. In this way, a continuous overlapping of the re-enforced parts results in an exceedingly sturdy paper structure.

In the accompanying drawings,

Figure 1 is a side elevational view of the cup of my invention, dotted lines being used to show the folding;

Figure 2 is a plan view of the cup, the original blank being indicated in dotted lines;

Figure 3 is an enlarged fragmentary cross-sectional view taken on the plane of the line 3—3 of Figure 2, looking in the direction indicated by the arrows;

Figure 4 is an enlarged fragmentary cross-sectional view taken on the plane of the line 4—4 of Figure 2, looking in the direction indicated by the arrows;

Figure 5 is an enlarged fragmentary cross-sectional view taken on the plane of the line 5—5 of Figure 2, looking in the direction indicated by the arrows; and

Figure 6 is a diagrammatic view showing the nature of the side wall fold.

The circular blank of paper is indicated at *a*. The cup which is formed therefrom comprises the bottom 1, and the flaring circular side wall 2 which is formed into

regularly spaced symmetrical tapering folds 3—3 of a type which may be called box plaits, that is, the overlaps 3^a, 3^a, are alternately in one direction and then the other. As shown, at the bottom these folds terminate in points 4, 4 and at the top they are greatly widened, the folds being however, slightly spaced from each other at the top at 5. It is also to be noted that on the inside of the cup the spaces between the folds have substantially parallel sides while on the outside of the cup the spaces between the folds taper toward the top.

The top, as shown in Figure 1, is folded down and over twice, flat, first on the line 6, and then again on the line 7. This is also shown in Figures 3, 4 and 5. In the finished article the folded down rim or edge may stand outwardly somewhat, as shown in Figure 1, or it may remain pressed up against the side wall of the cup as shown in Figures 3, 4 and 5.

But for the rim, the side wall 2 tends to "break joint" or articulate between the folds on the outside, in handling, due to the absence of re-enforcement and the curvature. When the rim, as described, is formed, these spaces are spanned on the outside by the portions *x, x*, the tendency for the articulation between the portions *x, x*, in the rim, per se, being counteracted by that part of the wall 2 which does not tend to articulate.

Not only is rigidity of structure secured by this combination, but a thick flat rim, as shown in Figures 3, 4 and 5, advantageous for drinking purposes, is secured.

I claim:

In a paper cup formed from a circular blank, a flat circular bottom, a circular flaring wall having tapered box plaits therein, and a rim turned twice downwardly from and against said plaited wall to form a thick flat rim having flat portions spanning the spaces between the tops of the spaces between the plaits on the outside.

In witness whereof I hereunto subscribe my name this 26th day of August 1920.

ERNEST R. HUNTLEY.