

H. R. HEYL.
PAPER DRINKING CUP.
APPLICATION FILED AUG. 7, 1911.

1,057,426.

Patented Apr. 1, 1913.

Fig. 1.

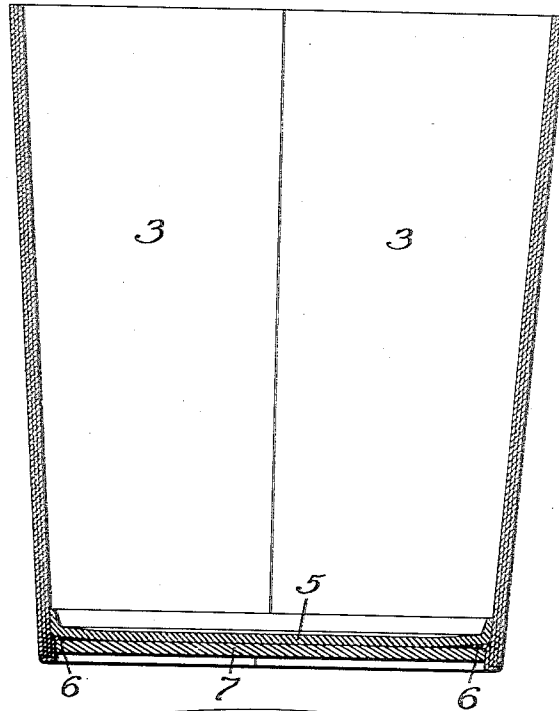


Fig. 2.

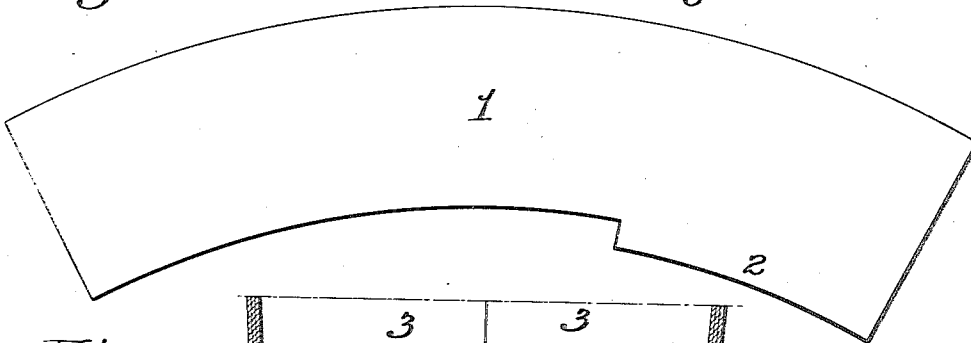


Fig. 6.

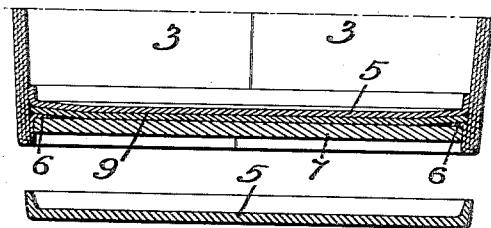


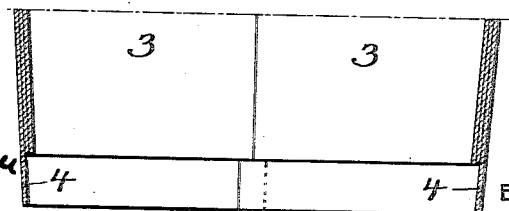
Fig. 3.



Fig. 4.



Fig. 5.



WITNESSES

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PAPER DRINKING-CUP.

1,057,426.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY R. HEYL, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Paper Drinking-Cups, of which the following is a specification.

The object of my invention is to provide a paper drinking cup, the bottom portion of which will be extremely rigid so as to prevent lateral crushing of the cup, the bottom members being also so disposed as to prevent leakage between the side and bottom members. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawing, in which—

Figure 1 is a sectional view of a paper drinking cup constructed in accordance with my invention; Fig. 2 is a view of the blank from which the body of the cup is produced; Figs. 3 and 4 are sectional views of the bottom members of the cup, Fig. 5 is a sectional view of part of the body of the cup at an intermediate stage in the formation of the latter, and Fig. 6 is a sectional view of the lower portion of a special form of cup in accordance with my invention.

In order to better illustrate the invention the sectional view of the drawing are exaggerated but no attempt has been made to adhere to the proper scale.

The blank 1, from which the body of my improved cup is produced, consists of a strip of paper of the desired thickness and of a width dependent upon the desired depth of the cup, this blank being in the form of a sector, as shown in Fig. 2, if the cup is to taper from top to bottom, or being straight if a cup with cylindrical body is desired. At one end the blank is widened in order to produce a flange 2 and when the blank is wound upon a mandrel in the ordinary manner so as to produce a cup body 3 having a plurality of plies, as shown in Figs. 1 and 5, the widened portion of the blank will constitute the outer ply and will thus form at the bottom of the body a downwardly projecting flange 4 which extends completely around the cup, as shown in Fig. 5, the plies being properly united by means of paste applied to one or both faces of the blank either before or during the winding operation. After the completion of the body 3 of the cup, as shown in Fig. 5, the inner bottom member 5 is inserted therein and

secured thereto, said inner bottom member 5 consisting, by preference, of a cupped disk whose upturned edge flange is united to the inner face of the body of the cup by suitable paste or cement, although a flat disk may, if desired, be used in place of the cupped disk. The projecting bottom flange 4 of the body member of the cup is then crimped in beneath the lower edges of the inner plies of said body, such crimped portion also extending up below the lower edge of the inner ply and then inwardly beneath the inner bottom member 4, as shown in Fig. 1, this inwardly projecting flange 6 being properly secured to the bottom member 4 by paste or cement applied to the under face of the latter or to the upper face of the flange 6. The bottom is then completed by the application of the outer member 7 which consists of a disk fitting snugly within the crimped portion of the flange so as to press the same outwardly against the body member 3 and confine the flange 6 of such crimped portion between the outer portions of the inner and outer bottom members, as shown in Fig. 1, the outer bottom member 7 being secured to the flange 6 by suitable paste or cement applied to either or both of these parts and said outer bottom member being likewise pasted to the inner bottom member 5, if desired, although this is not essential. After the completion of the cup in the manner described, the same is immersed in a bath of melted paraffin or equivalent waterproofing agent so as to provide the cup both inside and outside with a waterproof coating, although, if desired, this coating may be applied to the inside of the cup only.

The crimping of the flange of the outer convolution of the body of the cup around the lower edge of the inner convolutions of the same and the use of the inner and outer bottom members renders the bottom portion of the cup extremely rigid and well calculated to resist lateral crushing strain, while the confinement of the flange on the crimped portion of the outer convolution of the body between the inner and outer bottom members of the cup provides a bottom joint which will resist leakage even if the waterproof coating of the cup should become impaired.

In Fig. 6 I have illustrated a special form of cup in which the bottom is composed of three members, 5, 7 and 9, the

member 9 consisting of a flat relatively thin disk interposed between the members 5 and 7 and lying above the intumed flange 6 of the body part. Besides imparting additional stability to the bottom of the cup this interposed member provides a ready means of securing the different members of the bottom together, since it can be immersed in a vessel of paste or cement so as to be coated on top, bottom and outer edge, whereby, when it is inserted between the members 5 and 7 and the whole subjected to pressure, it will serve not only to unite said members 5 and 7 but will also aid in securing the bottom to the sides of the cup.

I claim:

1. A paper cup comprising a plied body member and a plurality of bottom members, the outer ply of the body having at the bottom a flange crimped around the lower edges of the inner plies and bearing against said edges, said outer ply terminating in an inwardly projecting flange which is confined between two of the bottom members.

2. A paper cup comprising a plied body member and a plurality of bottom members, the outer ply of the body having at the bottom a flange crimped around the lower edges of the inner plies and bearing against said edges, said outer ply terminating in an inwardly projecting flange which is confined between two of the bottom members, the latter members being secured together within the limits of the said flange.

3. A paper cup having a plied body mem-

ber whose outer ply has a bottom flange crimped around the lower edges of the inner plies and bearing against said edges, and an outer bottom member fitted into said crimped flange and serving to press the same outwardly against the innermost ply of the body.

4. A paper drinking cup consisting of a plied body member and a bottom member, the outer ply of the body member having a bottom flange crimped around the bottom edges of the inner plies and bearing against said edges, said crimp terminating in an inwardly projecting flange which bears against and is secured to the underside of the bottom member of the cup.

5. A paper drinking cup consisting of a plied body member and a bottom member comprising inner, outer and intermediate plies, the inner and outer plies being secured together through the medium of the intermediate ply, and the outer ply of the body member having a bottom flange crimped around the bottom edges of the inner plies and bearing against said edges, said crimp terminating in an inwardly turned flange which is confined between two of the plies of the bottom member.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

HENRY R. HEYL.

Witnesses:

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