D. F. CURTIN.

SANITARY PAPER CUP.

APPLICATION FILED DEC. 5, 1919.

1,413,460. Patented Apr. 18, 1922.

FIG. 2

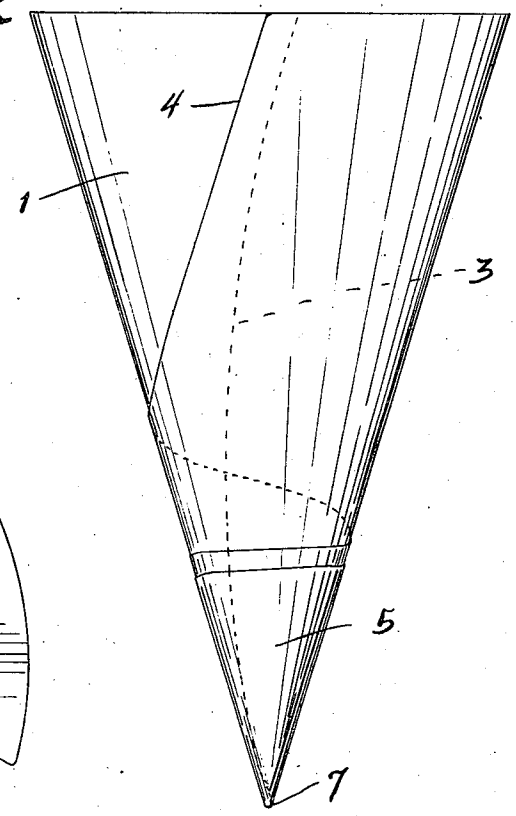


FIG. 1

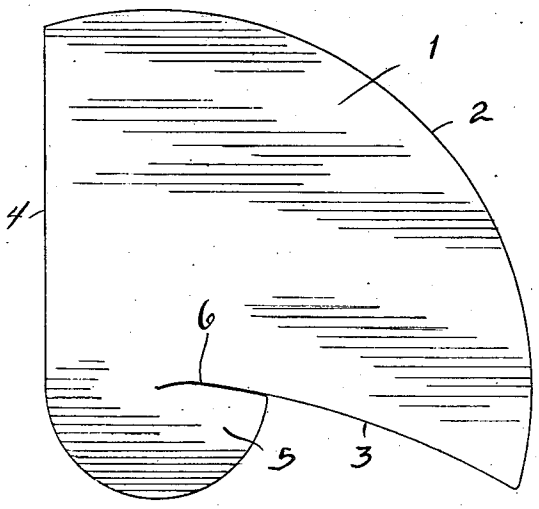


FIG. 4

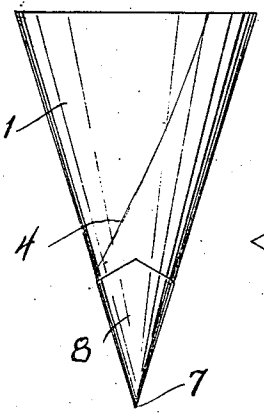


FIG. 3

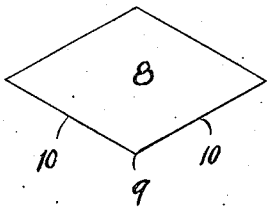
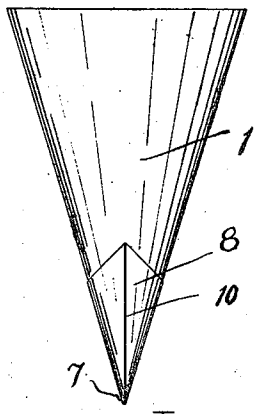


FIG. 5



Witnesses

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Chas. W. Hills

Inventor

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Chas. W. Hills Atty

UNITED STATES PATENT OFFICE.

DAVID F. CURTIN, OF CHICAGO, ILLINOIS.

SANITARY PAPER CUP.

1,413,460. Specification of Letters Patent. Patented Apr. 18, 1922.

Application filed December 5, 1919. Serial No. 342,639.

To all whom it may concern:

Be it known that I, DAVID F. CURTIN, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Sanitary Paper Cup; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form a part of this specification.

This invention relates to cups or receptacles formed of light flexible material adapted to nest within each other when not in service and to be supported by a suitably formed holder when in service.

Cups of this character have been formed by rolling a quadrantal blank into conical form and securing the overlapping edges together. Heretofore the inner edge of the cone so formed was in a straight line from the apex of the cone to other end thereof. In rolling the parts together this edge produced an abrupt change in the rolling action since all parts of this edge came into engagement with the rollers simultaneously. The result was a poor bond between this edge and the adjacent parts of the cup.

It is an object, therefore, of the present invention to provide a conical cup of this type in which the inner edge of the blank lies along a spiral line within the completed cup so that the rollers engage this edge progressively from one end to the other.

A further object of the invention is to provide improved means for reinforcing the ends of the cups and simultaneously providing means for preventing the cups adhering to each other when nested together.

Other and further important objects of this invention will be apparent from the disclosures in the drawings and specification.

The invention (in a preferred form) is illustrated in the drawings and hereinafter more fully described.

On the drawings:

Figure 1 is a plan view of a blank for making a cup embodying the features of the present invention.

Figure 2 is a side view of the cup formed by rolling the blank into conical form.

Figure 3 is a plan view of the reinforcing member.

Figures 4 and 5 are side views of the completed reinforced cup from different sides.

As shown in the drawings:

In the form shown the blank 1 for making the improved cup is of general quadrantal shape having an arcuate edge 2 adapted to form the rim of the completed cup and two side edges 3 and 4 radial in their general direction with a projection 5 provided near their proximate ends.

The edge 3, while curved throughout its length as shown, is substantially radial to the arcuate edge 2, while the other edge 4, which may be either straight or curved, preferably extends to the edge 2 on a line tangent to the curved edge of the projection 5. The length of the sides 3 and 4 and the angle therebetween obviously depends upon the desired depth and diameter of the cup.

While the extension 5 is integral with the body of the blank 1, it is partially separated therefrom by a curved slit or cut 6, one edge of which forms a continuation of the side 3.

In forming the cup the blank is rolled into conical form with the bottom of the slit 6 coinciding with the apex 7 of the cone and the edge 4 outside of and overlapping the edge 3. Next, the extension 5 is rolled around the bottom of the cone to provide reinforcement therefor.

In the preferred form the blank 1 is coated on one side with paraffin or other suitable adhesive water-proof material and is rolled into conical form so as to bring this coating to the outside of the cup so that such coating cannot under any circumstances become mixed with the contents of the cup or be scraped off when using a spoon or other utensil in the cup.

Any suitable material may be employed for rendering the blank impervious to water or other fluid and also for connecting the overlapping portions of the blank 1 and permanently securing them together. Preferably a suitable mixture of paraffin and other material is employed for this purpose. The treated blank is bent to form the cup and the water-proofing material is slightly warmed so as to readily adhere when portions of the blank are brought together and thus secure an absolutely tight joint where the edges of the blank overlap and the chilling of material permanently attaches the parts together.

When thus constructed it is obvious that where several of these cups are "nested," that is, packed one inside of the other, the walls of the several cups will be in close contact with each other and the coating may tend to stick the adjacent cups together, especially when slightly warmed. To avoid this difficulty a piece 8 of any suitable material, preferably the same as the cup, is wrapped upon the exterior of the cup to form a projection and slightly space the walls of adjacent cups from each other when so nested.

In the preferred construction a diamond shaped piece 8 of suitable size formed of uncoated material similar to that employed for forming the blank 1 is provided. This piece 8 is placed with one of its obtuse angles 9 in contact with the apex of the cone, preferably over the radial edge of the projection 5 formed by the slit 6, and folded therearound. Conveniently also the obtuse angle 9 of the diamond is such that when the piece is lapped around the end of the cone the sides 10, 10 of the diamond on either side of the angle 9 abut each other, as shown in Figure 5, so as to completely cover the projection 5. This diamond 8 both reinforces the cup and also provides an uncoated projection upon the exterior of the cup adapted to contact with the uncoated interior of the next adjacent cup thus preventing the possibility of adhesion between them, at the same time preventing the overlapping portions of the blanks from becoming disengaged.

I am aware that numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted otherwise than necessitated by the prior art.

I claim as my invention:

1. A blank for forming conical vessels, said blank being of approximately quadrantal form having an arcuate edge and two edges radial in general direction, said blank having a semicircular segmental extension at one of its radial edges which extension has its diameter approximately in line with the other radial edge of the blank which is curved throughout substantially its entire length, the first named radial edge being continuous with the curved edge of the extension, said blank having a curved slit extending from the junction of the curved end of the extension with the last named curved radial edge to the center of the extension, and the said center being at approximately the center of the circle upon whose arc the arcuate edge of the body of the blank is formed.

2. A conical vessel including a blank of approximately quadrantal form shaped to overlap the edges, and means for securing the overlapping edges together, each of said edges being spirally arranged in the completed vessel, and a reinforcing member formed into a cone to cover the tip of the vessel.

3. A conical vessel comprising a cone and a diamond-shaped reinforcing member curled around and secured to the apex of the cone, the obtuse angle of the diamond being such that, when the edges adjacent said angles abut, a cone is formed of substantially the same angle as the first mentioned cone.

4. A conical vessel comprising a cone and a reinforcing member having an obtuse angle, said member being curled around and secured to the apex of the cone with the point of the angle adjacent the apex of the cone, the said angle being such that when the edges adjacent said angle abut a cone is formed of substantially the same angle as the first mentioned cone, thereby affording a reinforcing member which completely surrounds the lower portion of the cone.

5. A blank for forming conical vessels, said blank being of approximately quadrantal form, having an arcuate edge and two edges radial in direction thereto, one of said radial edges being curved to provide an overlap in the completed vessel, the width of said overlap increasing toward the apex of the cup.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses:

DAVID F. CURTIN.

Witnesses:

LAWRENCE REIBSTEIN,

EARL M. HARDINE.