No. 616,939. Patented Jan. 3, 1899.

W. M. KINNARD.

PAPER VESSEL.

(Application filed Sept. 29, 1897.)

(No Model.) 2 Sheets—Sheet 1.

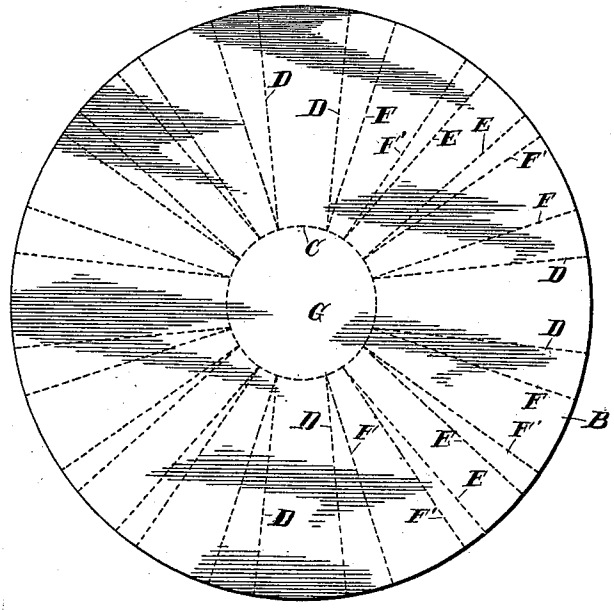


Fig. 1

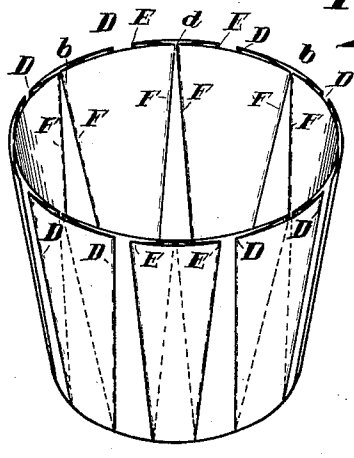


Fig. 2

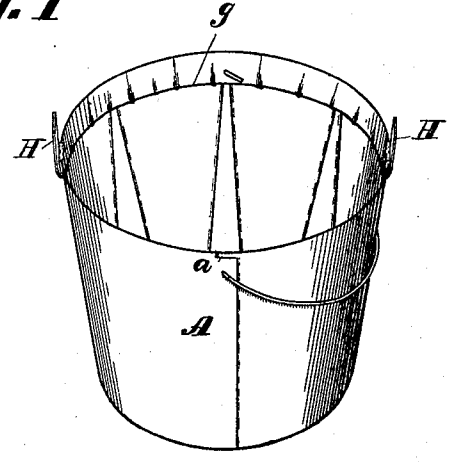


Fig. 3

Witnesses

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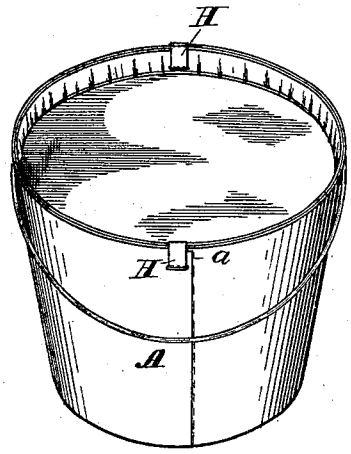


Fig. 4

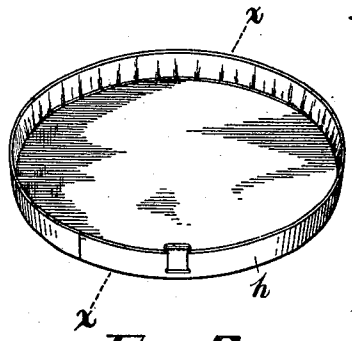


Fig. 5

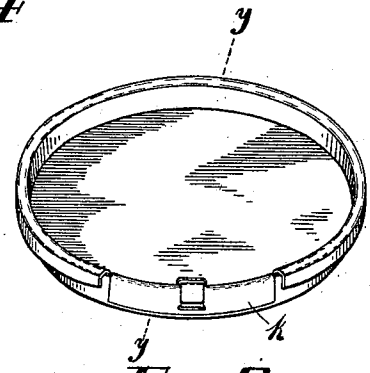


Fig. 6



Fig. 7

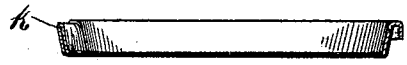


Fig. 8

WITNESSES

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UNITED STATES PATENT OFFICE.

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PAPER VESSEL.

SPECIFICATION forming part of Letters Patent No. 616,939, dated January 3, 1899.

Application filed September 29, 1897. Serial No. 653,422. (No model.)

To all whom it may concern:

Be it known that I, WILL M. KINNARD, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Paper Vessels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming apart of this specification.

My invention relates to an improvement in paper vessels and applies to such vessels made in the form of a bucket or pail and provided with more than one thickness of paper in the construction of the walls and also to the manner of constructing and attaching the lid, as will be more fully hereinafter set forth and described.

In the drawings, Figure 1 shows a blank of paper of the desired thickness creased and ready for folding. Fig. 2 is a perspective view of the blank shown in Fig. 1 folded into shape. Fig. 3 is a perspective view of the blank folded, as shown in Fig. 2, with the outside wall or casing and the lid clamps or fastenings in place. Fig. 4 is a similar view of the completed bucket or pail with one form of lid seated in place. Fig. 5 is a perspective view of one form of lid, and Fig. 6 is a similar view of another form of lid. Fig. 7 is a cross-section of the lid, taken on the lines X X of Fig. 5. Fig. 8 is a cross-section of the lid, taken on the lines Y Y of Fig. 6.

Like letters of reference indicate identical parts in all the figures.

For economy of material in constructing the pail but two walls are used, preferably of waterproof paper, producing a light yet slop-proof and very nearly waterproof vessel, in which no two seams in the material used register or come together. The outer wall is constructed in the manner described in my application, Serial No. 637,874, in the shape of a tube open at both ends, preferably larger at one end than at the other, and the edges thereof are brought together and overlap, as shown at *a*, Fig. 3, A being the outer wall or casing.

In the form of bucket shown and described in this specification I prefer to make the outer wall or casing longer than the inner wall, so as to permit its upper edge to be turned down over the upper edge of the inner wall and overlap and embrace the upper edge of the inner wall, where it is fastened by glue or in any other convenient way.

B is a circularly-cut blank of paper or other suitable material of a predetermined size, the size of the bucket or pail depending on the size of this blank B.

C is a circular crease in the center of the blank B, which crease forms the outline of the bottom G of the bucket. Radiating from the crease C and extending to the edge of the blank are creases made at predetermined points, each crease being at such an angle that it meets a similar crease at the point where they would cross the circular crease forming the bottom. These creases are designed to form, when the blank is folded into receptacle shape, a set of internal and a set of external folds, as will hereinafter more fully appear and be understood. The portions of the blank between the creases D D and creases E E form the external folds of the inner wall, while the portions of the blank between the creases F F′ form the internal folds of the inner wall. The crease F is folded toward the crease D, the portion of the blank between the creases D and F overlapping a part of the portion between creases D D, as seen at *b*, Fig. 2, while the crease F′ is folded toward the crease E, bringing the portion of the blank between the creases E and F′ to overlap the portion between the creases E E, as will be seen at *d*, Fig. 2. By thus folding the blank B as above described the form shown in Fig. 2 is obtained, producing a bucket or pail having no seam to be affected by the moist contents on the inside, the inner wall and bottom being formed of one sheet or blank reinforced by the various folds.

After the blank B is creased and folded, as above described, the outer wall or casing A, which is preferably made longer than the inner wall, is then placed around the folded blank B, its ends overlapping somewhat, as seen at *a*, Fig. 3, and glued. The upper edge of this casing A, extending beyond the inner wall by reason of its greater length, is creased or crimped and then turned down over the

inner wall, as shown at *g*, Fig. 3, where it is fastened, thus securely fastening it to the inner wall and also retaining the inner wall in proper folded shape, preventing this wall from dropping inward at its upper edge by reason of any strain thereon from the weight of contents placed therein or from weakness. By creasing or crimping this upper edge of the outer wall before it is folded over and then folding it into this smaller circle these creases or corrugations extending vertically give a stiffness and firmness to the fold, and when this creased flange or edge is glued down in place the additional amount of glue filling these creases on the inside also serves to produce a special stiffening and bracing effect, and I am thus enabled to produce a much firmer vessel from much lighter and more inexpensive material.

H H are clamps, preferably formed of tin or thin sheet metal and applied in the manner described in my former application, Serial No. 637,874.

The lid is preferably made saucer shape and is similar in construction and arrangement to those shown in my former application, above referred to; but to make it more rigid at the points where it receives the most strain and produce a more serviceable article I use a reinforcing-strip *h* for the upturned edge or flange portion of the lid when using the construction of lid shown in Figs. 4 and 5 and in cross-section, Fig. 7.

It has been found in practice when using a lid of the construction shown in Figs. 4 and 5, but without the reinforcing-strip *h*, that the lid by reason of its contact with the liquid or moist contents of the bucket or pail soon weakens and the upturned edge flattens, thus making it undesirable and annoying. It is to overcome this difficulty that the reinforcing-strip *h*, which may consist of very thin material, is designed. By the use of this reinforcing-strip or second rim or edge the portion of the lid where the hinge is fastened also necessarily becomes strengthened. This portion of the lid is subjected to considerable strain, and it has been found in practice that a little usage soon weakens the lid at this place and produces a consequent flabby condition of the lid, which is likely to become torn from its hinge.

When a lid, as shown in Fig. 6, with a double flange is used, which is described in my application, Serial No. 637,874, it will not be necessary to use the reinforcing-strip or second rim *h*, which covers or surrounds the entire flange or rim of the lid, as the double flange itself acts as a reinforcer and stiffens the rim of the lid. This double flange, however, cannot entirely surround the lid when desiring to hinge the lid to the bucket or vessel. It is at the point of attachment of the hinge in this as in the other form of lid that the lid is weakest.

In order to strengthen the lid and increase its usefulness, I secure to the rim of the lid, at the point where the hinge is attached between the ends of the double flange, a reinforcing flap or stiffener. By the use of this reinforcing strip and flap or stiffener the utility of the lid in connection with my improved pail or bucket is greatly enhanced.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A paper vessel consisting of an outer and inner wall, the inner wall consisting of a blank of flexible material creased and folded in the manner described, the outer wall being plain and extending up higher than the inner wall, the upper edge being crimped or corrugated and folded over inwardly to embrace the upper edges of the inner wall, substantially as and for the purpose described.

2. In a paper vessel having a saucer-shaped lid, said lid provided with a double or reinforced rim, substantially as and in the manner described.

3. In a paper vessel provided with a lid with a triple flange two folds of which embrace the upper edges of the vessel, the reinforcing-flap at the point of connection with the hinge, substantially as and in the manner described.

4. A paper vessel consisting of an outer and inner wall, said inner wall consisting of a blank of flexible material creased and folded in the manner described, the outer wall overlapping the upper edge of the inner wall to retain same in place, and provided with a lid having a triple flanged rim, the two outer folds of which fit down over and embrace the upper edges of the walls, substantially as and in the manner described.

5. A hinged circular lid for a paper vessel circular in horizontal cross-section, said lid fitting down within the upper edges of the vessel and having a flange consisting of three folds, the two outer folds embracing and inclosing the upper edges of the vessel in the manner described, said outer flange being slightly cut away to permit the lid to swing back on its hinge when opened, substantially as and for the purpose described.

6. A paper vessel provided with a lid, said lid being constructed with an upright flange integral with the body of the lid and having permanently attached to and forming part of said flange the inner leg of a circular strip folded or bent upon itself longitudinally so that when the lid is closed the outer leg of this strip will embrace the upper edges of the vessel, substantially as and for the purpose described.

7. A paper vessel provided with a lid fitting down within it a short distance, and having a double flange fitting over and inclosing the upper edges of the vessel, said flange formed by attaching to the upturned flange on the lid the inner leg of a circular strip folded upon itself, substantially as and for the purpose described.

8. A vessel circular in horizontal cross-section, in combination with a saucer-shaped lid, the body of which fits down within the upper edges of the walls of the vessel and is provided with an upright flange said flange having attached to it a circular strip bent upon itself substantially U-shaped in cross-section so as to embrace or inclose the upper edges of the vessel when the lid is in place to close the same, substantially as and for the purpose described.

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Witnesses:
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H. G. EDWARDS.