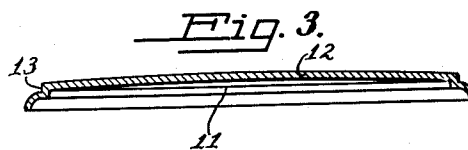
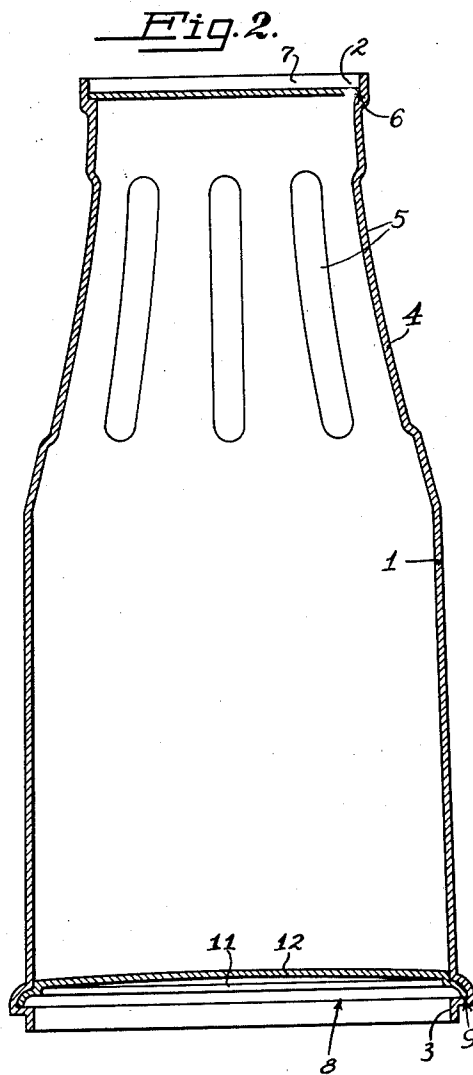
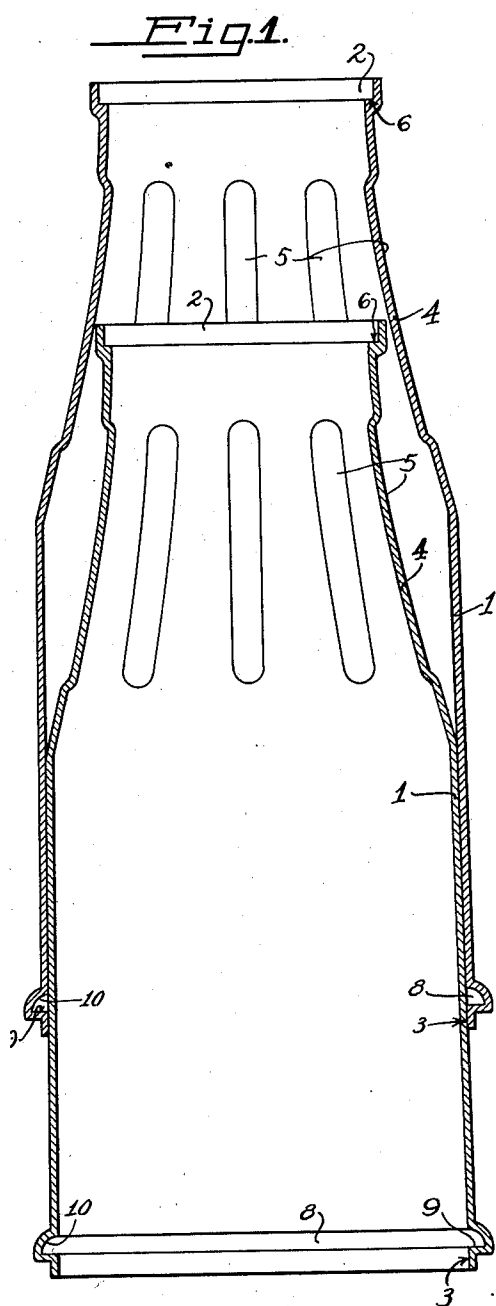


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K. TSUCHIYA

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LIQUID CONTAINER  
Filed March 19, 1929



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## UNITED STATES PATENT OFFICE

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## LIQUID CONTAINER

Application filed March 19, 1929. Serial No. 348,167.

REISSUED

The present invention relates to improvements in liquid containers and more particularly to that type of container commonly known as a milk bottle or receptacle.

The invention consists primarily in a tubular body, preferably of paper pulp structure suitably coated to prevent liquid penetration, and which may be cheaply manufactured and readily disposed of when its use is discontinued.

Among its objects, the present invention affords a container body open at its opposite ends and adapted for storage or stacked in nested formation, enabling the conservation of space. Another object is the provision of a bottom wall holding groove which affords a circumferential reinforcement for the lower edge of the container. A further object is to provide a bottom wall or closure member insertable into the container through its open bottom and which has tight seating contact within the bottom holding groove and which is further forced into contact with said groove by the weight of the contents of the container.

With the above mentioned and other objects in view, the invention consists in the novel construction and combination of parts hereinafter described, illustrated in the accompanying drawings and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

To more clearly comprehend the invention, reference is directed to the accompanying drawings, wherein:—

Figure 1 is a view in vertical section of a plurality of my improved containers in nested formation.

Figure 2 is a similar view with the closure cap and bottom wall in position.

Figure 3 is a view in detail cross section of the bottom wall.

Referring more particularly to the drawings wherein like characters of reference designate corresponding parts, 1 indicates a tu-

bular cylindrical body, open at its upper end at 2, and at its lower end at 3. The member 1 is preferably constructed of heavy paper, such as paraffin stock or is formed from paper pulp by any of the well known methods, and its surface, particularly its inner surface, is coated to preclude the admission of moisture thereinto. The upper end of the body 1 is tapered at 4 and is vertically ribbed at 5, the ribs affording strengthening means for the neck of the body. The member 1 slightly tapers or flares from a point below its neck to its bottom edge, enabling successive bodies, when their closures are eliminated from the ends, to be arranged in telescopic or nested formation, as in Figure 1.

At its extreme upper end the body 1 is formed with a closure seat 6, on which is adapted to rest the peripheral edge of a conventional milk bottle closure or cap 7.

Near its lower end the body 1 is circumferentially grooved at 8, the groove opening on the inner surface of the body and the outer wall of the groove affording a circumferential reinforcing rib for the lower portion of the body 1. The groove is provided with a bottom wall 9 disposed at substantially right angles to the wall of the receptacle and is further provided with an upwardly and inwardly curved wall 10 connecting the outer edge of the bottom wall with the wall of the body.

The bottom closure member comprises a disc 11 of a diameter for the snug reception of its peripheral edge into the groove 8, and the body of said disc is formed with a crowned center or surface 12. The peripheral edge of the disc is curved in cross section to correspond with the cross sectional curvature of the groove 8, and is also provided with a circumferential vertical wall 13 for contacting with the inner surface of the body 1 immediately above the groove 8, as in Figure 2. The disc 11 is inserted in position by slightly distorting the same and forcing it upwardly into the body 1 through its open bottom, the edges of the disc springing into place, as in Figure 2.

As the receptacle receives its contents, the weight of the contents on the crown center

tends to force the same into a horizontal plane, and in doing so, tightly forces the peripheral edge of the disc against the wall of the groove 8.

5 When the container is used for a dry commodity, it may be disassembled and used a succeeding time, but it is designed preferably for ready disposal after being used for a wet commodity, and without a serious financial loss to the user.

10 I claim:—

1. A liquid container comprising a tubular container body of rigid structure having a frustum conical upper portion superposed on a cylindrical lower portion, which lower portion is provided in its wall near and in spaced relation to its open bottom with a circumferential groove opening inwardly into the container, said groove provided with a bottom wall disposed at substantially right angles to the wall of the receptacle, and further provided with an upwardly and inwardly curved wall connecting the outer edge of the bottom wall of the groove with the container wall, a disc-shaped bottom closure having a crowned center and peripherally flanged to correspond to said groove, said bottom closure adapted for insertion into the container through its bottom.

30 2. A liquid container comprising a tubular receptacle structure open at its opposite ends and outwardly flaring from top to bottom to adapt the same for nesting and providing a tapering shoulder within its length, the wall of said receptacle being plurally grooved intermediate the shoulder and top and being provided near and in spaced relation to its lower edge with an integral outwardly disposed annular bottom wall seat, the lower surface of which lies at substantially right angles to the inner wall of the receptacle, and a bottom closure of crowned formation for upward insertion into the receptacle with its edge snugly fitting said seat, the top portion of said receptacle walls being formed outwardly providing a circular opening adapted to receive a closure cap there-  
45 through, and having associated with said opening a shoulder adapted to receive and support the closure cap.

50 In testimony whereof I have signed my name to this specification.

KONOSUKE TSUCHIYA.