

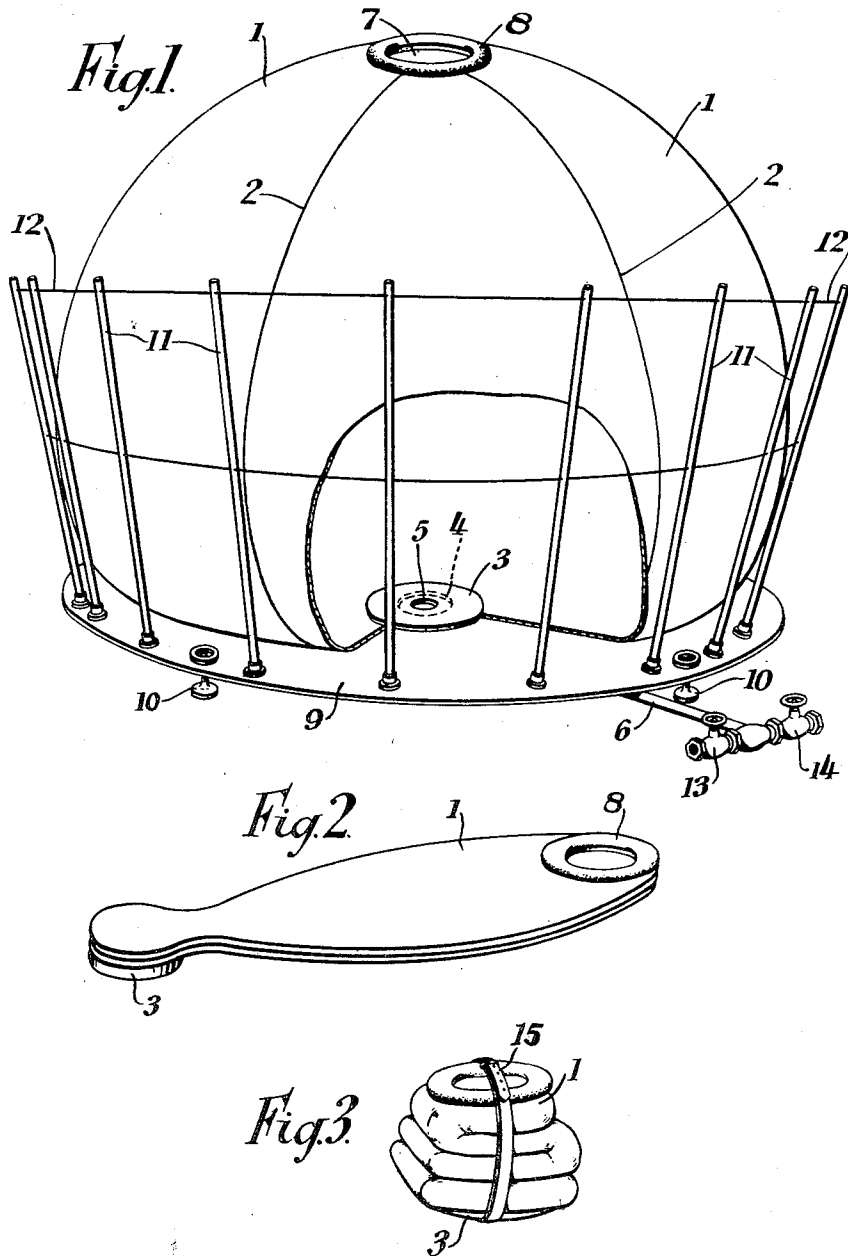
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CONTAINER FOR STORAGE OF LIQUIDS

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CONTAINER FOR STORAGE OF LIQUIDS

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This invention relates to containers for the storage of liquids.

It is the object of the present invention to provide containers for the storage of liquids which are collapsible to a compact form when they are not in use, thus facilitating the transport thereof.

According to the invention a collapsible container for a liquid, comprises a liquid-tight wall of flexible material so shaped that the container when filled with liquid approximates to a spherical shape, said wall having a vent at the top and a buoyant member attached to the vent to maintain the vent above the surface of the liquid.

Preferably the buoyant member comprises one or more inflatable rings and the wall of the container is composed of panels such that the shape of the upper part of the container when filled with liquid is hemispherical in shape and the lower half is of an oblate spheroidal shape to diminish creasing during filling and to promote stability when filled.

The invention will now be described with reference to the accompanying drawings in which:

Figure 1 is a part perspective view of a container constructed in accordance with the invention,

Figure 2 is a perspective view of the container when the panels are collapsed upon one another,

Figure 3 is a perspective view of the container when the panels are folded upon one another in a collapsed condition for transport or storage.

As shown in Fig. 1, the container comprises a plurality of panels 1 of rubberised fabric joined together by leak-proof seams 2 and adapted to take up an approximately spherical shape when filled with liquid. The seams extend circumferentially between two substantially diametrically opposite points on the wall of the container, the panels being attached in a leak-proof manner at one convergence of the seams to a metal ring 3 bordering the periphery of an aperture in the container wall. A hole 5 in the ring 3 is connected to a supply and delivery pipe 6 having valves 13 and 14 and the end of the container to which the ring is secured will hereinafter be referred to as the bottom of the container. Diametrically opposite the ring a vent 7 is formed in the container wall and an inflatable rubber ring 8 is bonded to the ends of the panels remote from the metal ring 3, the rubber ring 8 being concentric with the vent.

When the pipe 6 is coupled to a supply of liquid and the supply valve 13 is opened so that the container is gradually filled, the vent in the container wall allows air to escape from the container to

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prevent any build-up of pressure during filling, while the inflated rubber ring which surrounds the vent and is inflated keeps the vent above the liquid level and prevents spilling. The container will hold any amount of liquid within the range between empty and full, and as it is filled it takes up an approximately part-spherical, and finally, an approximately spherical shape, giving support to the liquid without spillage thereof.

If it is desired to give greater stability to the container, for instance when it is used on rough or uneven ground, the container may be mounted on a large flat foundation plate 9 with a central hole 4 to receive the metal ring 3. The foundation plate may be provided with levelling screws 10 to compensate for uneven contours of the supporting surface. It may be made of any suitable rigid material and is preferably made in hinged or disconnectible sections to increase portability.

To increase the stability of the filled container still further it may be encircled by a plurality of poles 11 spaced around the container and leaning outwards slightly at an angle of about 10° from the vertical. The poles can be supported in holes formed in the foundation plate 9 as shown, being joined together at their upper ends by bracing wires 12 and held firm by guy wires, not shown, attached between the upper ends of the poles and fittings on the foundation plate or structure.

The inflatable ring 8 need not be bonded to the interior of the wall as described above but may be secured thereto by a simple adhesive. Alternatively the inflatable ring may be detachably fastened to the wall, to be easily removable to facilitate compact packing of the container for transportation or storing.

Instead of a single inflatable ring, the buoyant member may comprise several inflatable rings so that if one should become damaged in use the buoyant member will continue to function.

It is preferred that the panels are such that the shape of the filled container is that of a hemisphere for the top half, and of an oblate spheroidal shape for the bottom half. This particular shape has been found to prevent creasing and puckering of the panels during filling and ensures good stability of the container whether it is full or only partly full.

A detachable cover may be fitted over the opening in the top of the container when in use, thus preventing the entry of extraneous material through the opening and decreasing the evaporation losses of the liquid.

In Fig. 2, the container is shown collapsed and

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with its panels superimposed on one another. In Fig. 3 the superimposed panels of the collapsed container are shown folded and held compressed in a compact shape for storage or transport by a strap and buckle 15.

Containers in accordance with the invention may be of any desired capacity, e. g. up to 10,000 gallons.

The rubberized fabric may comprise natural rubber or a synthetic rubber, the particular material chosen being dependent on the liquid to be held in the container, i. e. a material is chosen on which the liquid has no deleterious effect. For example, containers for water may be proofed with natural rubber or a butadiene-styrene copolymer, while if they are for oil any oil-resistant rubber, e. g. a butadiene-acrylonitrile copolymer, may be employed.

Having described my invention, what I claim is:

1. A collapsible container for a liquid comprising a liquid-tight wall composed of panels of rubberized fabric such that when the container is uncollapsed the shape of the upper part of the container is hemispherical and the shape of the lower part of the container is an oblate hemispheroid having a common equator with said upper part, said wall having a vent at the top, a buoyant member attached to the circumference of the vent, and a metal ring at the base of the wall provided with an aperture communicating with the interior of the container and adapted to be connected to a pipe exterior of the container.

2. A collapsible container for a liquid comprising

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ing a liquid-tight wall composed of panels of rubberized fabric such that when the container is uncollapsed the shape of the upper part of the container is hemispherical and the shape of the lower part of the container is an oblate hemispheroid having a common equator with said upper part, said wall having a vent at the top, a buoyant member attached to the circumference of the vent, a metal ring at the base of the wall provided with an aperture communicating with the interior of the container and adapted to be connected to a pipe exterior of the container, and a foundation plate having a central opening to receive the metal ring.

3. A container according to claim 2 comprising a plurality of poles located at circumferential intervals around the foundation plate and braced together at their upper ends around the wall of the container.

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