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COLLAPSIBLE BUCKET  
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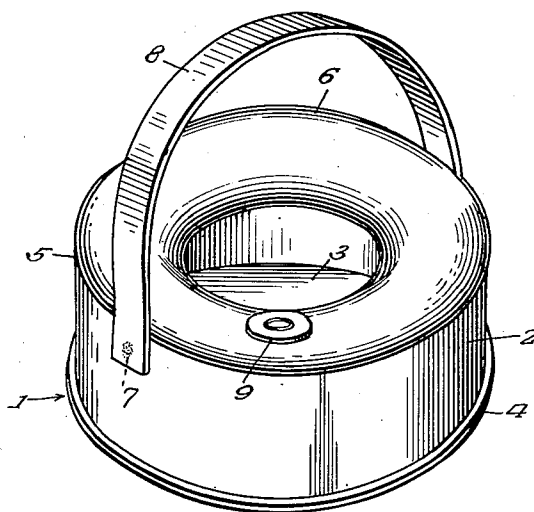
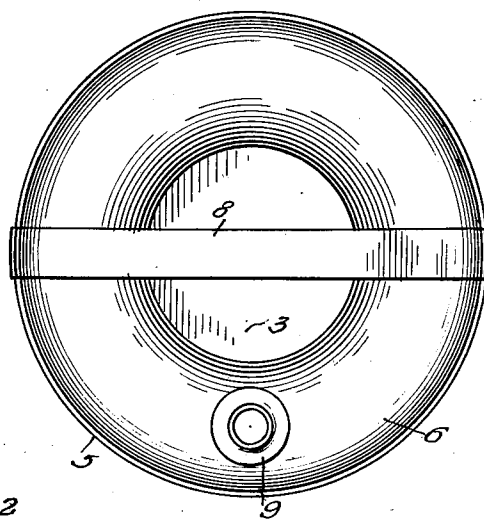
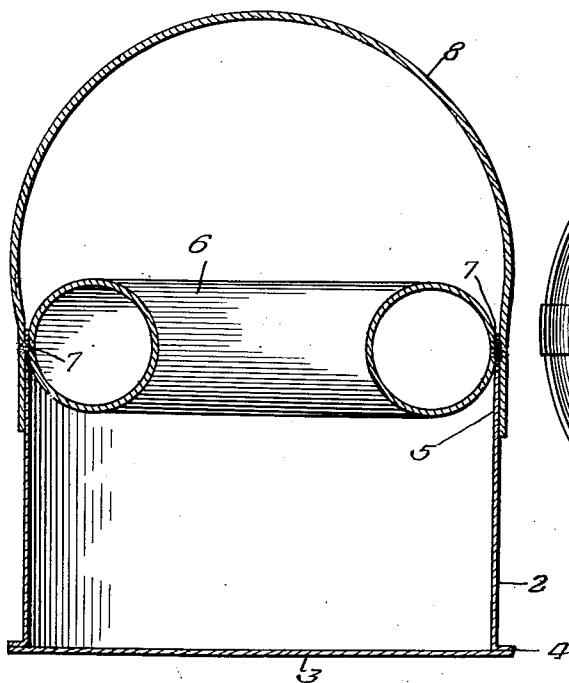


*Fig. 1*

*Fig. 2*

*Fig. 3*



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## UNITED STATES PATENT OFFICE

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## COLLAPSIBLE BUCKET

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1 Claim. (Cl. 150-48)

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This invention relates to a container and more particularly to a foldable and collapsible bucket for transporting and storing liquids.

An object of the invention is to provide a lightweight bucket which is flexible and collapsible into a small space when empty but which will retain its extended shape when full.

Another object of the invention is to provide a collapsible bucket which will be substantially non-submersible in water.

A further object is to provide means for preventing the collapse of the flexible sides of a bucket when loaded.

These and other objects and advantages of the invention will be more apparent from a consideration of the following description and drawings, in which:

Figure 1 is a perspective view of the collapsible bucket in its expanded form;

Figure 2 is a cross sectional elevation of the collapsible bucket in its expanded form; and

Figure 3 is a plan view of the expanded bucket looking downward at the top.

According to the present invention, it is possible to make a bucket which is completely collapsible and foldable into a small space. The bucket may be extended or expanded and sustained against collapse in its open or expanded state by means of a novel air chamber arrangement hereinafter fully described. This arrangement consists of an air chamber in the form of a tubular member disposed in the open end of the collapsible bucket. When filled with air or gas the tubular chamber performs the function of extending the sides of the collapsible bucket and maintaining them in an extended state while the bucket is loaded. The tubular air chamber serves a further purpose of making the bucket substantially non-submersible in water.

Considering the drawings in detail the bucket, as illustrated in Figures 1, 2 and 3, consists of a body 1 having a tubular collapsible side portion 2 and a circular foldable, collapsible bottom 3. The side 2 and the bottom 3 have a predetermined shape and are joined at the flanged portion 4 in any suitable fashion as, for example, by heat bonding, sewing, cementing and the like. Attached to the side portion 2 near the top 5 thereof is an annular, tubular, collapsible air chamber 6. The chamber 6 is secured to the top 5 of the sides 2 by any suitable means such as by sewing, cementing, and heat bonding, or by means of rivets, grommets or snap fasteners. The bond 7, as illustrated herein, is a cemented bond. The

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side portion 2 may have attached thereto near the top a handle 8 of collapsible material, such as cloth, plastic or rope. The handle 8 may be secured to the side 2 in any suitable manner, such as cementing, sewing, heat bonding, riveting or snap fastening, or by the conventional bail hook and seat arrangement.

The annular tubular member 6 is suitably made of plastic (e. g., rubber hydrochloride or polyvinyl chloride sheeting), rubber or impregnated fabric, or any other material which is flexible and collapsible and capable of holding air or gas under pressure. Air or gas is introduced into the annular tubular member 6 by means of the button valve 9 which is of conventional size, construction and shape. Air also may be exhausted from the annular tube through the same button valve member. Other suitable means for introducing air into the annular tube may be employed, such as the conventional mouth piece of the type used for filling balloons which is thereafter clamped shut to prevent escape of air from within the annular tube.

The sides and bottom of the collapsible bucket may be made of any suitable waterproof material. For example rubber, impregnated cloth fabric and plastic materials, such as Pliofilm (rubber hydrochloride sheeting), may be used to advantage. There are a number of suitable plastics which are sufficiently durable and waterproof to serve as the body portion of the collapsible bucket disclosed herein. It is not necessary that the component parts be of the same material, or of the same weight of material. For example, it is contemplated that light weight plastic sides may be employed with a heavier impregnated, waterproofed fabric bottom, or a plastic bottom. Such a bucket combines strength and durability with light weight. As stated above, the handle may be of any suitable material either the same or different from that of the sides and bottom. The handle may be either permanently attached or provision may be made for temporarily attaching the handle during use and removing the handle when the bucket is in collapsed form.

The collapsible air chamber may likewise be made of a variety of materials, the only essential requirement being that the chamber should be light in weight, easily collapsible and capable of holding air or gas under pressure. An annular rubber tube similar in design to an automobile tire inner tube represents one possibility. A number of plastics are available which have the properties required of the air chamber, and a

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preferred embodiment of the invention is the provision of a tubular annular air chamber made of a light weight plastic material, such as Pliofilm. It is possible to make the air chamber of the same material as that used in the body of the bucket. It is contemplated that a bucket may be made entirely of plastic materials in which case the joints between the bottom and the side portions and the joints between the air chamber and the sides are preferably heat bonded in the manner usually employed in joining plastic materials together. If rubber is used throughout in the bucket the joints are suitably sealed by a vulcanizing process.

It is further contemplated that the side portion and annular tubular member may be made of a single continuous piece of plastic material or rubber. In such case the material is formed into a loop at the top by bonding the end of the plastic piece to the side. Then a valve is positioned in the enclosing loop and air is injected into the loop to inflate it.

The collapsible bucket of the present invention overcomes the objections which have heretofore been voiced against collapsible containers, the principal objection being that the sides of the container tend to come together when loading of the bucket is begun. The first bit of material introduced into the bucket causes the bucket to sag, pulling the sides together. The present invention overcomes this objection by the use of the annular tubular air chamber 6 around the periphery of the bucket. In its inflated state the annular tubular chamber forces the sides into a predetermined expanded shape and maintains them in expanded form against collapse due to the weight introduced into the bucket. Hence the bucket may be loaded without crushing the contents between the collapsing sides and the bucket may be transported from place to place by means of the handle without spilling the contents. The volume of material which can be carried in the present bucket is greater than that heretofore possible in a collapsible container of like size. The maintenance of the bucket in extended or expanded position, as is accomplished in the present invention by means of an air chamber, prevents any substantial loss in the volume of the bucket. Squeezing of the sides together thereby causing overflow in the case of liquids has been substantially eliminated in the present bucket.

The bucket is particularly useful for campers and fishermen in that its light weight and collapsibility allow it to be easily carried and stored while at the same time providing a full size bucket for use at the camp site. The provision

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of the air chamber around the top of the present bucket has the further advantage of making the bucket substantially non-submersible. Hence it may be loaded with bait by a fisherman and placed in the water without danger of sinking and loss of bait. Likewise, foods may be placed in the dry interior of the bucket and the bucket partially immersed in water. In this manner foods may be kept cool without danger of being spoiled by water because the air chamber will cause the bucket to float upright. The bucket is particularly useful for fishermen since live bait may be carried in the bucket without harming the bait due to collapse of the sides. The smooth rounded sides of the air chamber at the top of the bucket prevent live bait from escaping from the bucket.

It is apparent that the present invention provides a collapsible bucket having new and unusual properties heretofore unknown in the art. The provision of the collapsible and inflatable air chamber about the top of the bucket renders the bucket sufficiently rigid in extended position that it may have substantially all of the properties of the conventional rigid bucket. At the same time the air chamber renders the bucket substantially non-submersible in water. Finally the bucket is collapsible and foldable into a small light weight package which may be easily carried in the pocket of the carrier.

The invention is hereby claimed as follows:

A collapsible bucket which comprises a foldable, collapsible tubular side portion, a foldable circular bottom portion disposed at one end of said side portion, means for joining said side portion and said bottom in liquid-tight engagement, a collapsible annular, tubular air chamber disposed at the other end of said side portion, the outermost point of said chamber being secured to the inner surface of said side portion, valve means for inflating and deflating said chamber and foldable handle means attached to said side portion.

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