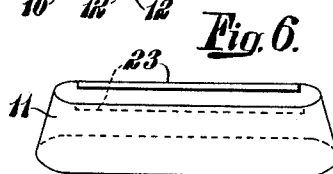
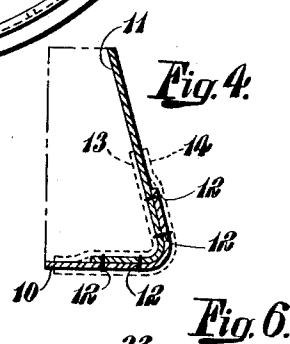
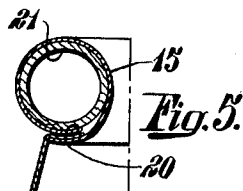
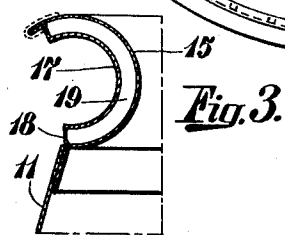
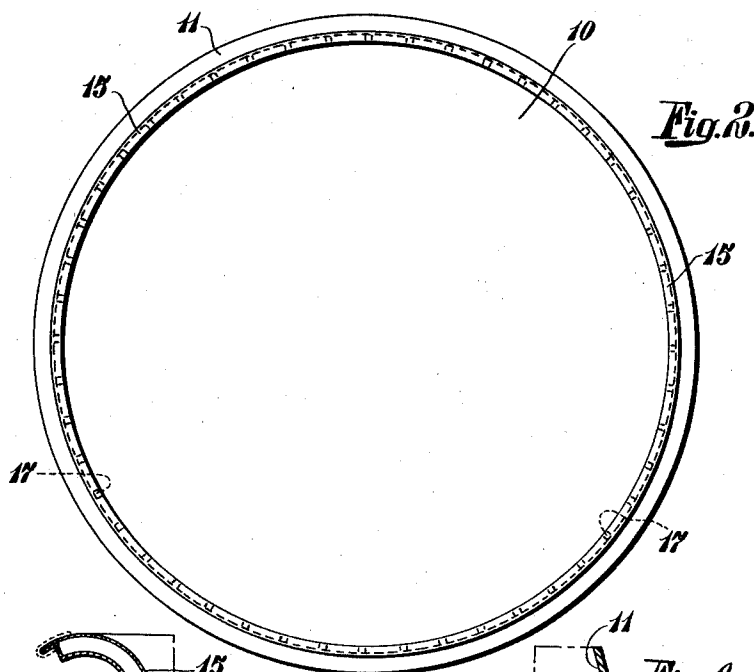
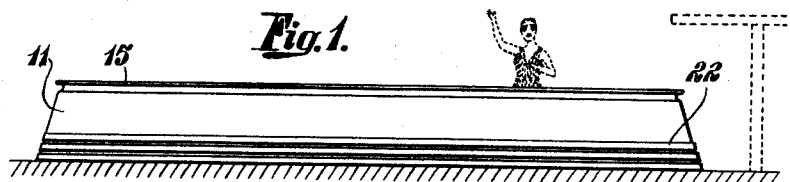


May 29, 1934.

M. L. McCULLOCH  
COLLAPSIBLE BATHING POOL

1,961,061

Filed June 30, 1931



Inventor  
Martin Lindsay McCulloch  
By B. Singer, atty.

# UNITED STATES PATENT OFFICE

1,961,061

## COLLAPSIBLE BATHING POOL

Martin Lindsay McCulloch, Harpenden,  
England

Application June 30, 1931, Serial No. 548,014  
In Great Britain May 6, 1931

9 Claims. (Cl. 4—177)

This invention relates to collapsible containers for liquid and more especially to containers for water of a collapsible and portable nature, and has for its object to provide open-topped containers of an extremely simple construction, which can readily be filled, and by such filling are extended to their full capacity, and which moreover, even when of large size, can be disposed or erected on any given site with ease, and as readily dismantled, collapsed and transported.

The invention further relates to containers as above described which although made from flexible material or materials, are self-supporting, with or without reinforcing means, in the position for use, that is to say in the extended position.

In general, collapsible containers for liquid, such as water, constructed according to the invention, comprise a base of desired dimensions and shape, preferably circular or elliptical and of flexible sufficiently water-proof or water-holding material or materials, made in one section, or in more than one section joined together, and having suitably united thereto in a suitable liquid-tight manner side walls, also of a suitable flexible water-proof material or materials, the said side walls being of such a nature that when fully extended, they make an angle a desired amount less than a right angle with the base, that is to say if the base is of circular form, the side walls are conical, so that the upper open end is a circle of less diameter than that of the base.

In the collapsed condition, it will be realized that the side walls can be folded down upon the base and that the base can be folded as desired, so that the complete container can be folded or packed into an extremely small compass.

When, however, it is desired to utilize the container to contain water, it may be unfolded and the base disposed in a suitable position. Upon supplying the liquid to the interior, as the level of the liquid rises, the side walls gradually will be lifted and by their shape and disposition will maintain the liquid in the container in position.

Containers according to the invention, however, may be applied to many other uses than those specifically mentioned, which are given by way of example only.

In order that the invention may be better understood, it will now be described with reference to the accompanying drawing in which:—

Fig. 1 shows an elevation of one form of plunge pool, swimming bath or the like constructed according to the invention.

Fig. 2 shows a plan of Fig. 1.

Fig. 3 shows to an enlarged scale a section of the upper edge of the bath shown in Fig. 1.

Fig. 4 shows to an enlarged scale a section of the joint between the sides and the base of the bath shown in Fig. 1.

Fig. 5 shows a similar view to Fig. 3 but of another method of carrying the invention into effect.

Fig. 6 shows a diagrammatic perspective view of another form of bath constructed according to the invention.

The bath shown in Figs. 1 and 2, as will be obvious, may be of any desired dimensions, but if desired it may have an outer diameter of 12-24' with a total depth of about 2' 6" to 3'. It comprises a circular base 10 and continuous side 11, the angle between the side and the base, when in the filled position as shown in Fig. 1, being say from 45-75°.

The base 10 of the bath according to the invention can be made of a single thickness of a suitable flexible material, or from more than one thickness and which material is of a water-proof nature and may have the upper surface, that is to say the surface which comes within the bath, treated in any particular manner, for example by rubber or otherwise. Moreover, the material or materials from which the base is made can be reinforced in any suitable manner, for example as hereafter described.

The joint between the side walls and the base, which may be effected in any suitable manner, for example by machine or other sewing, as shown at 12, Fig. 4, may be protected in any suitable manner, for example by an additional inner and/or outer thickness or thicknesses of material, which may be water-proof, and as shown in dotted lines at 13 and 14 respectively, Fig. 4.

In addition, the side walls may be reinforced in any suitable manner, the reinforcement if desired being integral with one or more thicknesses of material from which the side walls are made, or independent of such thicknesses.

Such reinforcement of the sides may be applied from the lower edge a desired distance upwards, for the purpose of helping to sustain the outward pressure of the water, and/or on the exterior or interior of the upper portion to keep it from sagging inwards, and especially that part which comes above the level of the water in the container.

In certain cases, especially to facilitate the collapse and transport of the container, the reinforcing means may be detachable.

In desired constructions, the reinforcement of the sides may be comprised by one or more ropes which encircle the container and are located in position by loops in strips on the exterior of the sides, such ropes themselves having their ends joined together, so as completely to encircle the container, and if desired having means by which their length can be adjusted.

With baths and the like constructed according to the invention, the upper edge of the sides is preferably formed so that it does not sag inwards and also preferably so that when the bath or the like is being filled, it assists in the elevating of the sides, by its buoyancy.

Various means may be adopted for this purpose, and as shown in Figs. 1, 2 and 3, the upper edge of the sides 11 has sewed thereto a ring-like portion 15 of the material from which the bath is made, which in section is somewhat semicircular and which as shown in Fig. 3 projects to the interior over the bath. The extreme outer and upper edge is hemmed, double hemmed or otherwise suitably finished and may if desired be suitably reinforced or stiffened by webbing or otherwise and at spaced intervals, for example 18" apart, strips 17 are sewed to the underside of the portion 15, the strips say being about 2" wide to form pockets 18 for the reception of shaped stiffeners 19 of wood or other suitable material. These shaped stiffeners have substantially a semicircular form and also in cross section are preferably a semicircle or other segment of a circle.

The effect is to cause the portion 15 comprising the upper rim to project over the interior of the bath so that surges or waves in the bath are repelled and also upon filling for the upper rim to float upwardly to assist in the elevation of the sides 11.

Fig. 5 shows another method of forming the upper rim and again in this case the portion 15 of flexible material is utilized, adapted to be turned round into a complete circle in section and to be fastened by means of a press-button fastening 20 as shown, the pocket formed being utilized to carry a shaped ring or sections of a ring of wood or other suitable material, or an inflatable tube or the like, or, as shown, a tube or pipe 21 of rubber or the like. By this means also the rim is prevented from sagging inwards and the construction assists by its buoyancy in the raising of the sides.

On the baths, such for example as shown in Figs. 1 and 2, where circumferential bracing, especially around the side walls, becomes necessary, this may be accomplished by circumferentially arranged hemp ropes, wire straining cords, steel cables or the like. These are all preferably made so that they can be adjusted and if desired suitable vertical ropes may be arranged between the circumferential ropes or the like to prevent the canvas bulging between the circumferential bracings. In some cases these that have been termed vertical ropes may be extended past the joint to the underside of the container and their inner ends may be united by another circumferential rope or the like in this position. In desired cases, where circumferential bracing is utilized in conjunction with vertical ropes or the like, the whole bracing may be made in one piece as an encircling multiple girdle or the like, with suitable fastening devices, so that it can be readily applied in position or removed.

As shown in Fig. 1, a series of reinforcing strips 22 are employed around the exterior of the sides

11 to resist the radial strains, and each of these strips may be sewed in position, or else the upper strip may be sewed and have the lower strips connected thereto by suitably spaced vertical strips. The total result is that the canvas is reinforced against radial or bursting strains.

Where the base 10 is made up from a number of sections, these may be of suitable material, such as a water-proofed canvas or the like in strips 36" wide, or of other widths, for example 72", the edges being balloon or otherwise seamed together and the whole cut to the required shape, such as a circle.

The side 11 may be cut in one piece from a strip of suitable width, the upper and lower edges being cut along desired circumferential curves and the resulting somewhat wavy strip folded about the joints between the curves to give the required conical shape when joined to the base and in the position ready for use.

Baths constructed according to the invention have the sides sloping inwards at a desired angle to support themselves and prevent collapse through swaying of the whole mass of the water and it has been found in practice that this angle can be about 75° to the horizontal or can still further approach the vertical and still retain the quality of preventing the collapse through swaying.

The material from which the bath or the like is made or some portions thereof, may in certain cases be made from a flexible material of any suitable type and have a water-proof inner lining or thickness or be treated to render it water-proof.

Fig. 6 shows diagrammatically a form of the invention suitable for ordinary bathing purposes, which is of elongated rectangular form with rounded ends and with the sides sloping inwards. In this case it is preferable to provide the longitudinal upper edges with a seam or hollow tubular part 23 to receive a longitudinal stiffening rod or the like.

The invention is not limited to the precise forms or details of construction described, as these may be varied to suit particular cases.

What I claim and desire to secure by Letters Patent of the United States of America is:—

1. A collapsible swimming or bathing pool comprising a water-proof base and a single side wall of flexible waterproof material surrounding said base, the perimeter of the upper edge of which wall is less than the perimeter of the base, so that the wall extends inwardly and overhangs the base when the container is filled.

2. A collapsible swimming or bathing pool as claimed in claim 1, comprising a waterproof base, a single flexible side wall surrounding said base and having a shorter perimeter at the upper edge than at its lower edge and flexible reinforcing means on said side wall.

3. A collapsible swimming or bathing pool as claimed in claim 1, comprising a flexible waterproof canvas base and a single flexible canvas side wall surrounding said base and having a shorter perimeter at the upper edge than at its lower edge.

4. A collapsible swimming or bathing pool as claimed in claim 1, comprising a waterproof base, a single flexible side wall surrounding said base and having a shorter perimeter at the upper edge than at its lower edge and flexible means for reinforcing said side wall peripherally.

5. A collapsible swimming or bathing pool as claimed in claim 1, comprising a waterproof base,

a single flexible side wall surrounding said base and having a shorter perimeter at the upper edge than at its lower edge and buoyant means associated with the upper edge of the side wall, and forming a vertical extension thereof.

6. A collapsible swimming and bathing pool as claimed in claim 1, comprising a waterproof base, a single flexible side wall surrounding said base and having a shorter perimeter at the upper edge than at its lower edge, and wood members associated with the upper edge of the side wall to render same buoyant.

7. A collapsible swimming and bathing pool as claimed in claim 1, comprising a waterproof base, a single flexible side wall surrounding said base and having a shorter perimeter at the upper edge than at its lower edge, and a rubber tube around the upper edge of the side wall to render same buoyant.

8. A collapsible swimming and bathing pool as claimed in claim 1, comprising a waterproof base, a single flexible side wall surrounding said base and having a shorter perimeter at the upper edge than at its lower edge and an upwardly and outwardly curved edge to said side wall to oppose waves or surges.

9. A collapsible swimming or bathing pool as claimed in claim 1, comprising a waterproof base, a single flexible side wall surrounding said base and having a shorter perimeter at the upper edge than at its lower edge, and a plurality of C-shaped elements at spaced intervals around the upper edge to cause the said edge to curve over outwardly.

MARTIN LINDSAY McCULLOCH.

80

85

90

95

100

105

110

115

120

125

130

135

140

145

150