Sept. 28, 1971 A. L. WALL 3,608,099

SWIMMING POOL COVER

Filed Oct. 20, 1969

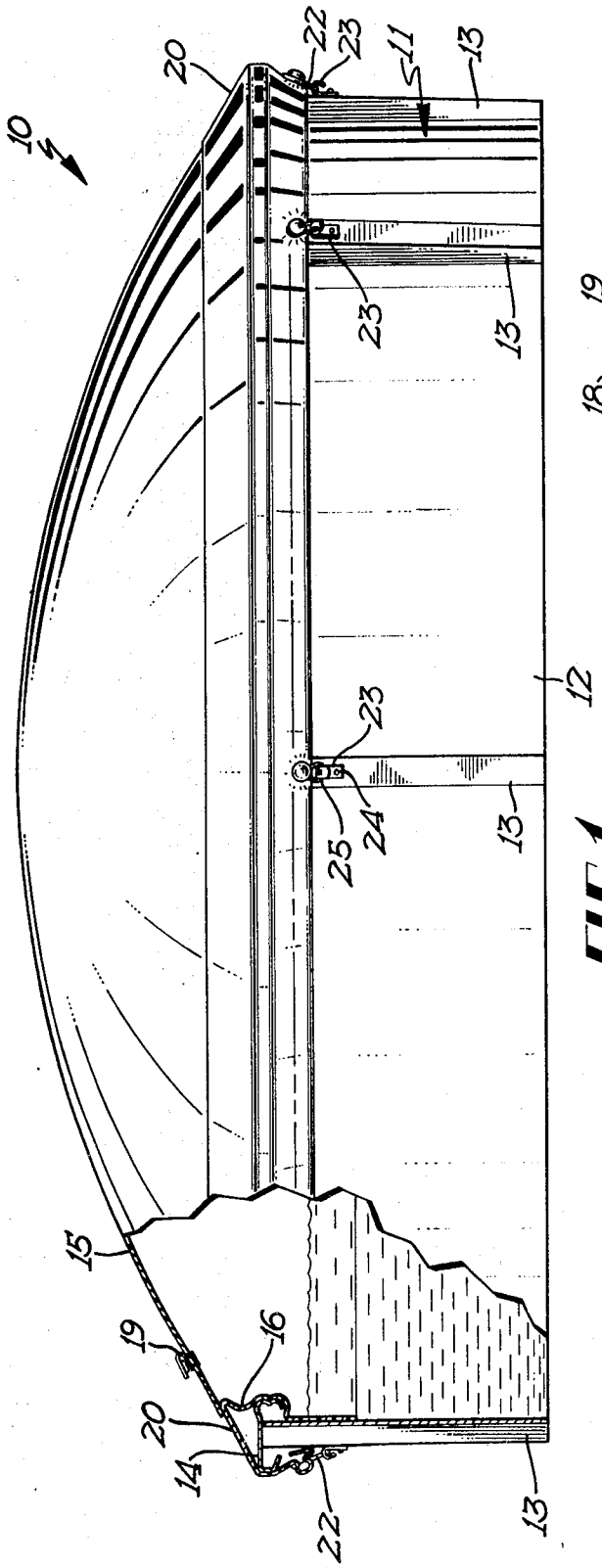


FIG 1

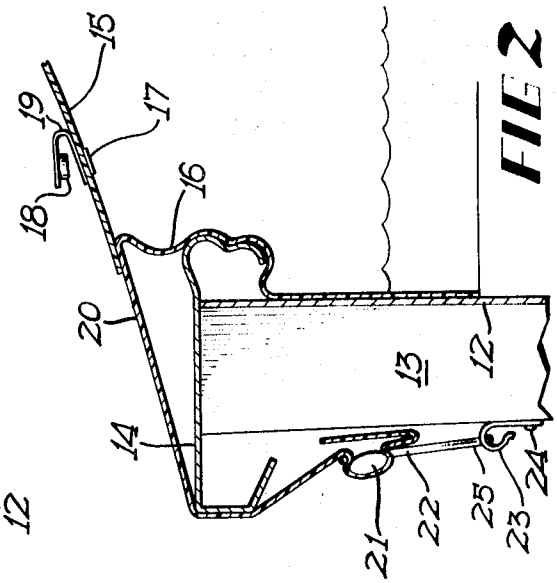


FIG 2

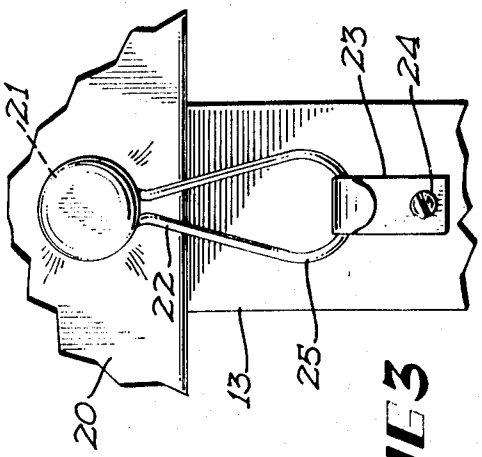


FIG 3

INVENTOR.
ARVEL L. WALL
BY Williamson, Palmatier & Bains
ATTORNEYS

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SWIMMING POOL COVER

Arvel L. Wall, Helena, Ark., assignor to Domain Industries, Inc., New Richmond, Wis.

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U.S. Cl. 4—172.12 3 Claims

ABSTRACT OF THE DISCLOSURE

An inflatable swimming pool cover includes an air impervious flexible sheet which corresponds in shape and size to the swimming pool surface and is provided with an air impervious annular flap secured to the peripheral edge portions thereof. The flap is adapted to extend below the pool surface and cooperates with the sheet to entrap air between the sheet and the pool surface so that the swimming pool cover is supported by the entrapped air. An annular skirt is secured to the peripheral portions of the sheet and extends outwardly therefrom for attachment to the exterior portions of the swimming pool to retain the inflatable cover in covering relation with respect to the swimming pool.

SUMMARY OF THE INVENTION

Many of the commercially available swimming pool covers, while serving to prevent large particulate material such as leaves and the like from entering the swimming pool, do not prevent small particulate debris, such as dust, pollen and the like, from falling in the pool, nor do such covers prevent water from entering the pool. Other commercially available covers, while being formed of a water impervious material, are difficult to remove from the pool especially if there is an accumulation of water, leaves and the like deposited upon the upper surface of the cover.

It is therefore a general object of this invention to provide a novel inflatable cover for a swimming pool which covers the entire upper surface of the swimming pool and which is inflated by air trapped between the upper surface of the swimming pool and the cover.

A more specific object of this invention is to provide an inflatable swimming pool cover comprised of a sheet of air impervious material corresponding generally in size and shape to the swimming pool surface and having an annular flap secured to the peripheral edges thereof which extend below the surface of the water to sealingly engage the inner peripheral wall surface of the pool to entrap the air between the sheet and the pool surface, and suitable retaining means being provided for releasably securing the inflatable cover to the exterior of the swimming pool.

These and other objects and advantages of this invention will more fully appear from the following description made in connection with the accompanying drawings wherein like reference characters refer to the same or similar parts throughout the several views.

BRIEF DESCRIPTION OF THE FIGURES OF THE DRAWING

FIG. 1 is a side elevational view of the novel swimming pool cover in an inflated condition and applied to an above-ground pool with parts thereof broken away for clarity;

FIG. 2 is a fragmentary sectional view of an enlarged scale of a portion of the swimming pool and inflatable cover; and

FIG. 3 is a fragmentary side elevational view of the retaining means.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings, it will be seen that one embodiment of the novel swimming pool cover, designated generally by the reference numeral **10**, is thereshown. The inflatable swimming pool cover **10** illustrated in the embodiment of FIG. 1 is used for covering an above-ground swimming pool, such as the swimming pool **11**, which includes a continuous vertical side wall **12** formed of metal and positioned upon the surface of the ground. An impervious flexible liner, preferably formed of a suitable plastic material, is applied to the upper edge of the wall **12** and depends interiorly of the wall to define the interior of the swimming pool. A plurality of similar vertical supports or legs **13** may be positioned exteriorly of the wall **12** and in engaging relation therewith. The wall **12** may also be provided with seats or top rails **14** as best seen in FIG. 1, these top rails extending throughout the periphery of the vertical wall.

The inflatable cover **10** is comprised of a flexible air impervious cover sheet **15**, which is formed of a suitable plastic material, such as vinyl, and which has a shape and size corresponding in shaped and size to the swimming pool surface to be covered. An annular flap **16** is bonded to the marginal edge portion of the sheet **15** and extends outwardly therefrom. The flap may be bonded to the cover sheet by heat sealing or alternatively may be bonded thereto by a suitable adhesive material. It will be noted that the annular flap **16** is bonded to the lower surface of the sheet **15** and it is pointed out that this flap is also formed of air impervious material and is denser than water so that the flap will sink. The flap **16** has a transverse or axial dimension of a sufficient magnitude to permit the flap to extend below the surface of the water when the swimming pool cover **10** is applied to a swimming pool.

The cover sheet **15** has a valve opening **17** therein to permit inflation and deflation of the cover sheet, the valve opening being closed by a closure element **18**. This closure element **18** is secured to the sheet by a flexible attachment element **19**, as best seen in FIG. 2. It is pointed out that when the inflatable cover sheet is inflated, air will be entrapped between the cover sheet **15** and the upper surface of the pool.

Means are provided for releasably securing the inflatable cover in covering relation with respect to a swimming pool. In this regard, the annular flap **16** is folded adjacent its bond line to define an annular skirt **20**. The annular skirt **20** is of a size to extend over the top rail of the swimming pool and downwardly therefrom.

The annular skirt **20** is provided with a plurality of circumferentially spaced apart elements or buttons **21** which are preferably formed of wood, such as birch or maple, and which are applied to the lower or inner surface of the skirt adjacent the outer peripheral edge thereof. These buttons are applied by looped shaped retaining elements **22**.

The loop shaped retaining elements **22** anchor the inflatable cover to the swimming pool by releasably engaging anchor elements **23** which as shown, are in the shape

of metallic hooks. Each hook is secured to one of the legs **13** by a suitable sheet metal screw **24** and it will be noted that the hooks are arranged throughout the circumference of the swimming pool. The looped shaped retaining elements **22** are each formed of metal and each includes an upper loop which extends around and clamps one of the buttons **21** within the annular skirt **22**. Each retaining element **22** also includes a lower loop **25** which extends downwardly and as best seen in FIGS. 2 and 3, releasably engages one of the hooks **23**. Thus it will be seen that the swimming pool cover may be readily applied to and removed from a swimming pool.

In this regard, to install the cover, the cover may be first extended to its full diameter and then folded back on itself for ease in handling. The cover may then be positioned upon the upper surface of the swimming pool and unfolded to completely cover the upper surface of the swimming pool. The annular flap **16** will be positioned interiorly of the swimming pool and will sink below the surface of the water while the annular skirt **20** will be pulled over the upper rail and downwardly and exteriorly of the wall **12**. The retaining elements are applied to the cover by forcing the wooden buttons through the small loop of each retaining element and after these retaining elements have been secured to the associated buttons, they may be secured to the hooks **23**.

When so applied, the cover may then be inflated by introducing air through the valve opening **17**. One manner in which the cover may be inflated is to utilize a conventional home type vacuum cleaner which is adjusted so that air is exhausted through the hose. The vacuum cleaner hose may be inserted through the opening **17** until the cover is inflated to the desired degree. Thereafter, the valve opening **17** will be closed by the closure element **18**. As the air accumulates between the cover sheet **15** and the upper surface of the water, the annular flap **16** will be urged against the inner wall surface of the swimming pool. As pointed out above, the transverse or axial dimension of the annular flap is of a magnitude to permit the flap to depend from the cover sheet a substantial distance below the surface of the water. Since an inner plastic liner is used in above-ground swimming pools, the annular flap will extend downwardly and lie against the inner liner. The annular flap **16** therefore cooperates with the cover sheet **15** and the water within the pool to very effectively entrap the air below the cover sheet. This entrapped air serves to very nicely inflate and support the cover sheet in a convex dome fashion as illustrated in FIG. 1. The annular flap **16** also serves to protect or shield the upper rails from the water contained within the pool. Therefore, in the event that there is any corrosive material such as a chlorine solution within the water, then the metallic parts of an above-ground swimming pool will be protected from this solution including the wall **12**, the top rails **41** and the vertical legs **13**. The annular skirt **22** is also air impervious and prevents any water, debris or the like from reaching the top rail or annular flap from the exterior.

The convex or dome shaped configuration of the cover when inflated produces a self-cleaning function since leaves, snow, trash and water will tend to blow or be blown from the upper surface of the sheet **15**. Because of the gas impervious properties of the sheet **15**, small particulate material such as dirt, dust, pollen and the like, as well as water, are prevented from entering the pool. Further, the cover also serves as a safety device by preventing children from gaining access to the pool when it is unattended. It has also been found that in the event that the inflatable cover becomes detached from the swimming pool, it will immediately collapse since the air which inflates the cover is trapped between the pool surface and the sheet **15**.

The cover may be readily deflated by removing the closure element **18** and allowing the air to escape therethrough, and air may be allowed to escape by merely raising the flap **16**. The trapped air pressure not only supports the cover sheet **15** but also urges the annular flap into intimate contact with the inner surface (flexible liner) of the swimming pool to form a highly effective air seal. As an alternative to the embodiment illustrated in FIG. 1, the annular flap may merely constitute an extension of the cover sheet **15** but will be of sufficient density to extend below the surface of the water when the swimming pool cover is applied. If lightweight material is used, the outer or lower peripheral edge portions of the flap may be weighted. The annular skirt **20** may be provided with suitable retaining elements which will releasably engage suitable anchor elements located exteriorly of the pool. With this arrangement, the swimming pool cover may be used to cover in-ground swimming pools, as well as swimming pools partially above the ground or completely above the ground as illustrated in FIG. 1.

It is further pointed out that the inflatable cover also serves to insulate the pool from extreme heat or cold, thereby maintaining the water at a relatively even temperature and thus preventing freezing of the water surface especially in mild climates. As pointed out above, the use of an annular flap **16** not only serves to form an effective water seal but also protects certain metallic parts against any corrosive effect.

From the foregoing description, it will be seen that I have provided a novel inflatable impervious swimming pool cover which is highly effective in preventing foreign debris and the like from entering the swimming pool. From the preceding paragraphs, it will be seen that the swimming pool cover may be very easily applied and removed and also functions as a safety device by preventing access to the pool when unattended.

Thus it will be seen that I have provided a novel inflatable swimming pool cover which is not only of simple and inexpensive constructions, but one which functions in a more efficient manner than any heretofore known comparable cover.

What is claimed is:

1. An inflatable swimming pool cover for an above-ground swimming pool having a continuous vertical side wall positioned upon the surface of the ground and extending vertically upwardly therefrom, an impervious flexible liner applied to the upper edge of the vertical side wall and depending interiorly thereof, a plurality of vertical supports positioned against the exterior surface of the vertical wall, a continuous top rail positioned upon the upper edge of the vertical wall throughout the periphery thereof, said cover comprising:

an air impervious flexible cover sheet corresponding in size and shape to the surface of the pool,

an air impervious annular flap secured to the peripheral portion of said sheet and extending outwardly therefrom, and extending below the surface of the water to sealingly engage the inner upper surface of the vertical wall throughout the entire periphery thereof to entrap air between said sheet and the pool surface to permit the sheet to be supported and inflated by the entrapped air, said annular flap being formed of a material having a greater density than the density of water,

an annular skirt secured to the peripheral portions of said sheet and extending outwardly therefrom to engage the exterior surface of the vertical wall throughout the entire periphery thereof,

a plurality of spaced apart retaining elements on said skirt adjacent the outer peripheral edge portion thereof,

a plurality of anchor elements each being mounted on one of the vertical supports adjacent the upper portion thereof and each anchor element being releasably engaged by a retaining element to retain the inflatable cover in covering relation with respect to

the swimming pool, said annular skirt and annular flap completely covering the upper rail to seal the same from the water.

2. The swimming pool cover as defined in claim 1 wherein said retaining elements comprise a plurality of loop shaped elements, and each of said anchor elements comprises a hook engaging one of said loop shaped elements.

3. The inflatable swimming pool cover as defined in claim 1 and an opening in said sheet spaced inwardly from said annular flap, and closure element secured to said sheet for selectively closing and opening said opening.

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HENRY K. ARTIS, Primary Examiner