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Koliomichalis

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[54] **INFLATABLE SWIMMING POOL COVER**

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[51] **Int. Cl.** **E04h 3/16,** E04h 3/18

[58] **Field of Search** 4/172.12, 172.11, 4/172, 172.14; 52/1, 2

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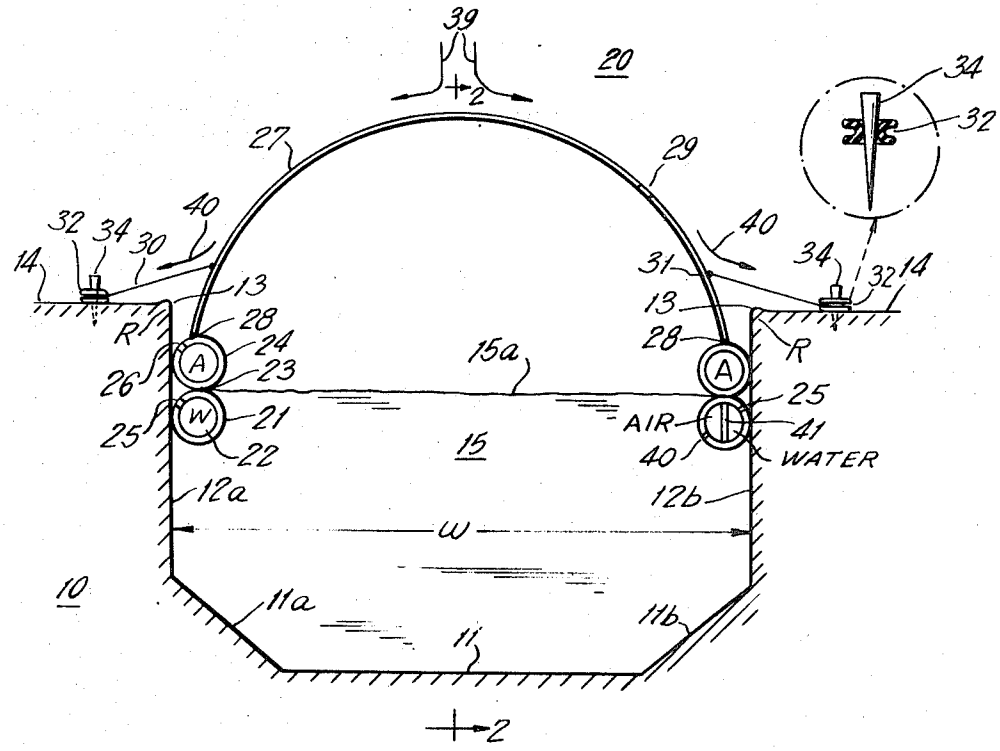
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[57] **ABSTRACT**

A cover for swimming pools and the like comprising a first continuous sleeve forming a ballast which is immersed in the pool around the perimeter thereof. A second continuous air-filled sleeve positioned immediately above the ballast limits the immersion level of the ballast. A sheet of plastic of suitable gauge is sealed to the air-filled sleeve and covers the pool. A valve is provided in the aforementioned flexible sheet for filling a hollow region defined by the sheet and the surface of the water with air. An apron provided around the perimeter of the sheet prevents the collection of water and/or debris. The apron may be anchored by a ballast sleeve and/or a plurality of stakes. As an alternative arrangement the first sleeve may be filled with both air and water in combination to serve the function of both the ballast and the buoyancy structures.

6 Claims, 3 Drawing Figures



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FIG. 1.

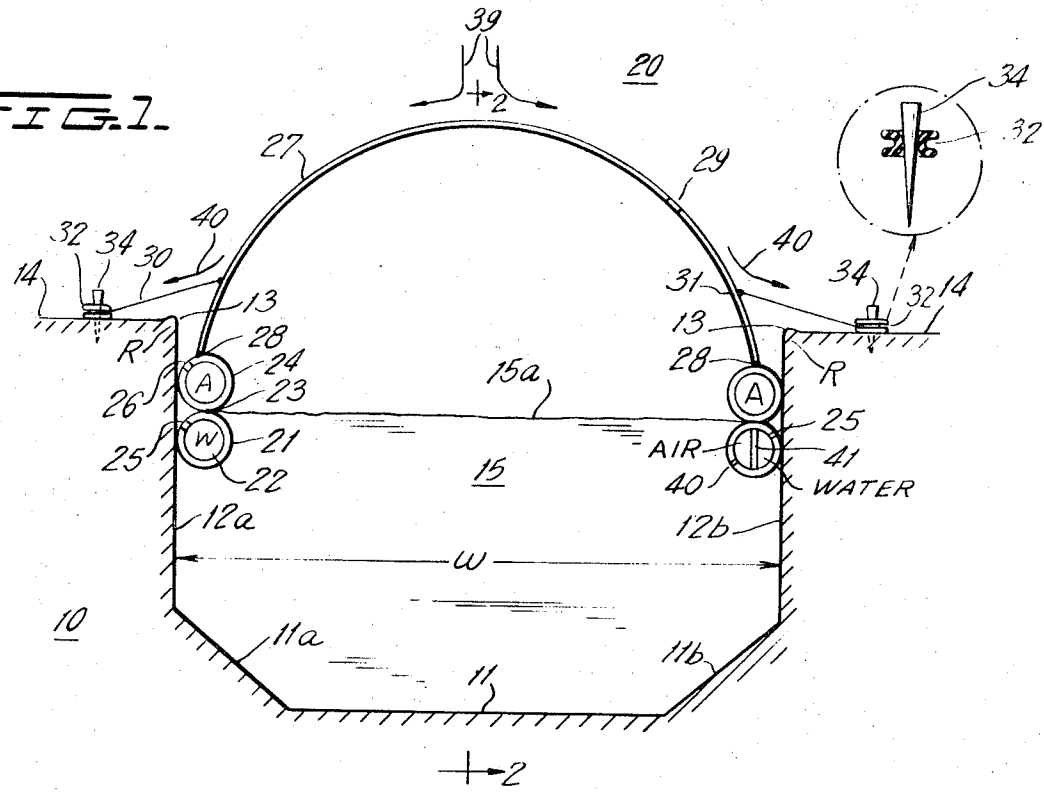


FIG. 2.

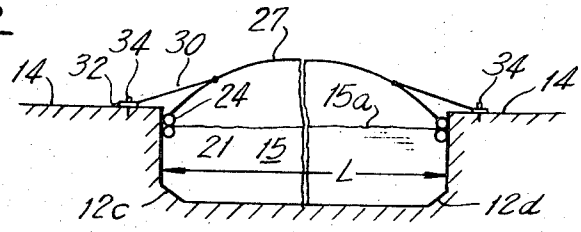
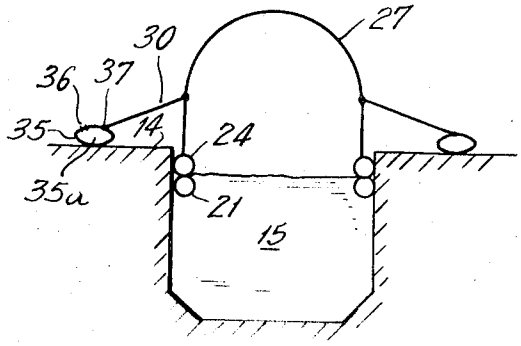


FIG. 3.



INFLATABLE SWIMMING POOL COVER

The present invention relates to swimming pools and more particularly to a novel cover for swimming pools to prevent the collection of water and/or debris upon either the swimming pool or the cover.

BACKGROUND OF THE INVENTION

Swimming pool covers are typically employed by swimming pool owners during the winter months of the year to protect the collection of water and debris in the pool so as to keep the pool substantially clean and greatly facilitate cleaning of the pool each spring. One conventional swimming pool cover is comprised of a flexible, substantially heavy gauge plastic sheet which is positioned over the surface of the water and is adapted to extend somewhat into the pool so as to rest at the surface level of the water. The periphery of the sheet extends upward and around the coping of the swimming pool and is provided with a re-enforced border for securement of the swimming pool cover. The border is typically anchored to the ground by pegs or stakes. Alternatively, swimming pool covers have been provided with a continuous sleeve provided around the periphery of the heavy gauge plastic sheet, which continuous sleeve is filled with water to act as a ballast or anchoring means for the cover.

One of the great disadvantages of the aforementioned swimming pool covers resides in the fact that whereas they may keep the pool relatively clean, a rather substantial amount of debris and/or water may collect upon the top surface of the cover sheet making it extremely difficult to remove the cover and yet prevent the debris and/or water collected upon the cover sheet from being deposited in the pool during the removal operation.

A BRIEF DESCRIPTION OF THE INVENTION

The present invention is characterized by providing a novel swimming pool cover which, in addition to keeping the swimming pool free of debris and/or water, serves further to prevent any debris or water which may fall upon the cover sheet from being collected by the cover sheet.

The present invention is comprised of a continuous sleeve having a shape conforming to the perimeter of the pool. A second sleeve which is of substantially the same configuration as the first sleeve, is secured to the first sleeve. A cover sheet having a surface area substantially greater than the surface area of the pool is secured around its entire periphery to the second sleeve. The first sleeve is filled with water to act as a ballast while the second sleeve is filled with air so as to provide buoyancy for the cover. The first sleeve is inserted into the water with the level of immersion of the first sleeve being controlled by the buoyant air-filled sleeve. The cover sheet is provided with a valve means which is adapted to permit the region defined by the cover sheet and the top surface of the water to be filled with air so as to inflate the cover sheet to assume a substantailly dome-shaped configuration.

An apron is secured to the cover sheet near the second sleeve and is provided with anchoring means for securing the apron to the region surrounding the coping of the swimming pool. The anchoring means may either be comprised of stakes or pegs or, alternatively, may be comprised of a water filled sleeve to provide adequate ballast for anchoring the apron. Once filled with air, the cover sheet assumes a substantially dome-shaped configuration, causing any water or other debris falling upon the cover sheet to run off. Any debris which may temporarily collect upon the cover sheet will be washed off by rain. Alternatively, the cover sheet may be periodically washed down with water to remove any debris which may temporarily collect thereon. As a further alternative the air filled sleeve may be eliminated and both air and water may be introduced into the ballast sleeve.

OBJECTS OF THE INVENTION

It is therefore one object of the present invention to provide a novel cover sheet for swimming pools and the like which is adapted to prevent the collection of debris and/or water in the pool, as well as preventing the collection of debris and/or water upon the cover sheet assembly.

Another object of the present invention is to provide a novel inflatable cover sheet for swimming pools and the like in which a peripheral portion of the cover sheet is immersed in the swimming pool; the region defined by the top surface of the water and the cover sheet is filled with air to cause the cover sheet to assume a substantially dome-shaped configuration and an apron is provied to prevent run-off and debris from collecting near the edge of the pool whereby the apron diverts any debris or water away from the perimeter of the pool so as to keep the pool clean and free of debris.

A BRIEF DESCRIPTION OF THE FIGURES

The above as well as other objects of the invention will become apparent when reading the accompanying description and drawing in which:

FIG. 1 is a sectional elevational view of a swimming pool cover assembly designed in accordance with the principles of the present invention.

FIG. 2 is a sectional view of FIG. 1 looking in the direction of arrows 2—2.

FIG. 3 shows a sectional elevational view of another embodiment of the present invention.

DETAILED DESCRIPTION OF THE FIGURES

FIGS. 1–3 show elevational views of a swimming pool **10**. For example, FIG. 1 shows a sectional view taken through a swimming pool having a width W substantially less than its length L (see FIG. 2). The swimming pool is comprised of a bottom surface **11** having sloping side walls **11***a* and **11***b* whose inner ends join the bottom **11** and terminate along vertical side walls **12***a* and **12***b*. For purposes of describing preferred embodiments of the present invention it will be assumed that the swimming pool is substantially rectangular in shape and is provided with four side walls (**12***a* and **12***b* in FIG. 1 and **12***c* and **12***d* in FIG. 2). Each of the vertical side walls terminates at its upper end in a coping **13** which joins the vertical side walls to ground or surface level **14**. The pool is shown as being filled with water **15** to a level **15***a*. Whereas the embodiment to be described herein has been adapted for use in a rectangular pool, it should be understood that the pool cover assembly of the present invention may be adapted to accommodate any other pool shape, be it square, rectangular, round, oval, kidney-shaped, roman style, and the like.

The cover assembly **20** is comprised of a continuous sleeve **21** filled with water whose interior **22** is filled

with water. Sleeve 21 is joined at 23 by any suitable sealing process to a second air-tight sleeve 24. Sleeves 21 and 24 are each provided with at least one valve means 25 and 26 adapted to enable sleeves 21 and 24 to be filled with water and air respectively, while at the same time preventing the egress of water and air respectively once the sleeves 21 and 24 are filled. If desired, additional valve means may be provided to facilitate filling of the sleeves. Alternatively, the sleeves 21 and 24 may be either continuous sleeves or may be comprised of a plurality of sections of sleeves each capable of being independently filled.

A flexible heavy gauge plastic sheet 27 has its peripheral edge sealed to air-filled sleeve 24 at 28 by any suitable sealing or joining process. The surface area of sheet 27 is significantly greater than the surface area of the pool.

The manner of use of the pool cover assembly is as follows:

Sleeve 24 is filled with air through valve 26. Sleeve 21 is then filled with water through valve 25 causing it to be immersed in the water. However, the buoyancy of air-filled sleeve 24 limits the amount of immersion of the water border sleeve 21. The sleeves closely follow the contour of the pool so as to be positioned within the pool in the manner shown best in the figures. Sheet 27 is provided with a valve 29 adapted to receive an air hose or other means for filling the region defined by the top surface 15*a* of the water in the pool and sheet 27. When suitably filled with air, sheet 27 assumes a substantially dome-shaped configuration as shown in the figures.

An apron sheet 30 is secured to cover sheet 27 at 31 and is adapted to overlie the ground 14 in the immediate region of the edge of the pool as shown. The outer periphery of the apron may be provided with circular metallic rings 32 arranged at spaced intervals around the entire periphery of the apron 30. Pegs or stakes 34 may be driven through the rings to anchor the apron to the ground in the manner shown.

Alternatively, FIG. 3 shows an arrangement which may be substituted for that of FIG. 1 wherein the periphery of apron 30 is provided with a continuous sleeve 35 having at least one valve 36. Continuous sleeve 35 is joined to the periphery of apron 30 at 37 by any suitable sealing operation. Continuous sleeve 35 is filled with water through valve 36 which, once sleeve 35 is filled, acts to retain the water within the interior 35*a* of the sleeve. Sleeve 35 is made of a diameter sufficient to receive a substantial amount of water to provide a ballast suitable for anchoring the apron and prevent any movement thereof. In addition, continuous sleeve 35 is adapted to conform to the configuration of the surface 14 upon which it rests to prevent any debris or water from passing beneath sleeve 35. If desired, sleeve 35 may be comprised of a plurality of individual sleeves each having their own valve means to enable the sleeves to be filled with water.

Due to the dome-shape of cover sheet 27, any water or debris falling upon sheet 27 will be diverted downwardly and away from sheet 27 in the manner shown by arrows 39. Any debris or water which is diverted downwardly along dome-shaped cover sheet 27 is further caused to be diverted outwardly in the direction shown by arrows 40 so as to pass along the surface of apron 30 and thereby be substantially completely removed from the pool cover assembly. Whereas rainfall will facilitate the cleaning of the swimming pool cover assembly, the swimming pool cover, when inflated, may further be washed down periodically with water so as to keep the cover clean and free of debris. The immersion of the water border sleeve 21 into the water of the swimming pool serves to define a hollow interior region between the surface 15*a* of the water and the interior surface of cover sheet 27 to thereby retain the air inserted into this hollow interior region through valve means 29 to retain the pool cover assembly in the inflated condition. Air-filled sleeve 24 is filled with air to a pressure sufficient to control the amount of immersion of sleeve 21 in water 15. Whereas the sleeves 21 and 24, when filled, remain in contact with the vertical side walls of the pool, apron 30 serves further to retain them in this position as well as serving to prevent any debris or water from collecting in the regions R between the cover sheet 27 and the upper ends of the vertical side walls.

Whereas the description set forth herein discloses a swimming pool cover assembly for use with rectangular-shaped pools, it should be understood that the cover may be adapted for use with any other pool configuration, depending only upon the needs of the user.

The ballast sleeve 21 may alternatively be filled with both air and water to serve as both the ballast and buoyancy means, thus eliminating the need for sleeve 24. A one-way valve 40 adapted to fill sleeve 21 with air may be provided along sleeve 21 in addition to valve 25. Alternatively, the sleeve 21 may be provided with a middle barrier 41 to divide the single sleeve into a sleeve portion for receiving water and a sleeve portion for receiving air.

It can be seen from the foregoing description that the present invention provides a novel inflatable swimming pool cover assembly for use in keeping the swimming pool free of dirt and debris. In addition thereto, the nature and shape of the swimming pool cover assembly is such as to keep the cover itself free of water and/or debris and for providing a substantially self-cleaning capability.

Although there has been described a preferred embodiment of this novel invention, many variations and modifications will now be apparent to those skilled in the art. Therefore, this invention is to be limited, not by the specific disclosure herein, but only by the appending claims.

What is claimed is:

1. A cover for swimming pools and the like comprising:

a first hollow tubular sleeve formed of a substantially flexible material and having a shape substantially conforming to the shape of the pool;

a second hollow tubular sleeve including buoyant means, said second sleeve being secured to said first sleeve;

a flexible non-porous cover sheet having a surface area substantially greater than the surface area of said pool and having a periphery substantially conforming to the shape of the pool;

the entire periphery of said sheet being joined to said buoyant means;

said first sleeve being at least partially filled with a material causing it to be at least partially immersed in the water in said pool and beneath said first sleeve;

said buoyant means being adapted to limit the

amount of immersion of said sleeve in said water; said sheet having at least one valve means to enable the hollow region defined by the surface of the water in said pool and the confronting surface of said sheet to be filled with air to inflate said sheet whereby said sheet assumes a substantially dome-shaped configuration to prevent the collection of water and/or debris upon said cover sheet.

2. The pool cover assembly of claim 1 wherein said buoyant means is comprised of a second hollow tubular sleeve having valve means adapted to enable said second sleeve to be inflated with air to urge said first and second sleeves toward the walls of said pool and to prevent said second sleeve from bending.

3. The pool cover assembly of claim 1 wherein said first sleeve is provided with at least one valve means adapted to be filled with a liquid and retain said liquid in said first sleeve.

4. The pool cover assembly of claim 1 further comprising an apron having an inner periphery continuously joined to said cover sheet along an imaginary line spaced inwardly from the juncture between said second sleeve and said cover sheet and having an outer periphery extending beyond the perimeter of the swimming pool to cause debris and/or water falling upon either said cover sheet or said apron to run off said apron and away from said swimming pool;

means for anchoring said apron to the ground to prevent movement of said apron and to retain said first and second sleeves against the side walls of the swimming pool.

5. The pool cover assembly of claim 4 wherein said anchoring means further comprises a third hollow tubular sleeve having a shape generally conforming to the shape of the swimming pool and being supported on the ground surrounding and adjacent the perimeter of the swimming pool;

said third sleeve including valve means for filling said third sleeve with a liquid and for retaining the liquid in said third sleeve; said third sleeve conforming to the contour of said ground to prevent water and/or debris from entering into the pool and beneath said third sleeve.

6. The pool cover assembly of claim 1 wherein said first and second sleeves further comprise a single sleeve and a flexible sheet for dividing said sleeve into upper and lower sleeve portions for respectively being filled with said air and water.

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