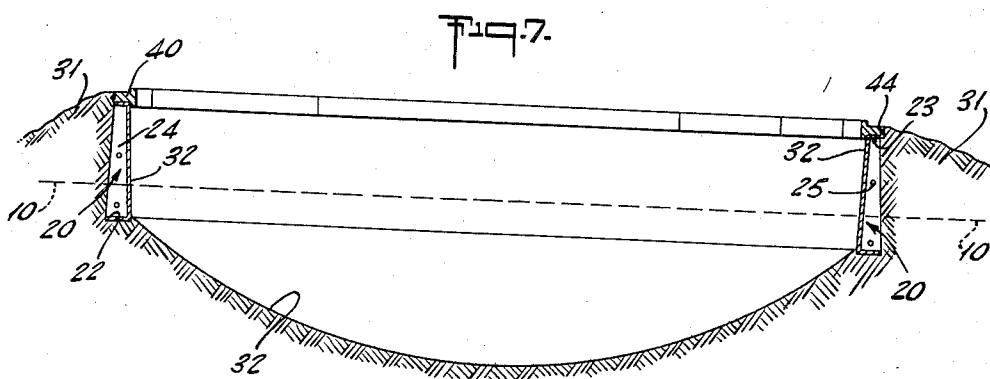
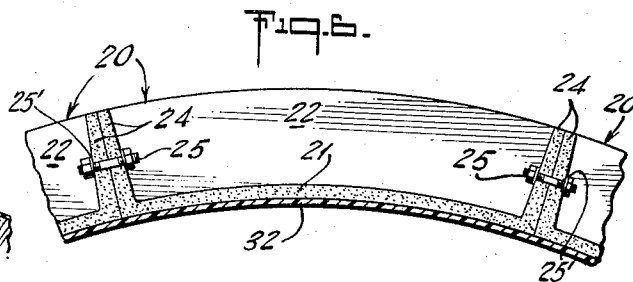
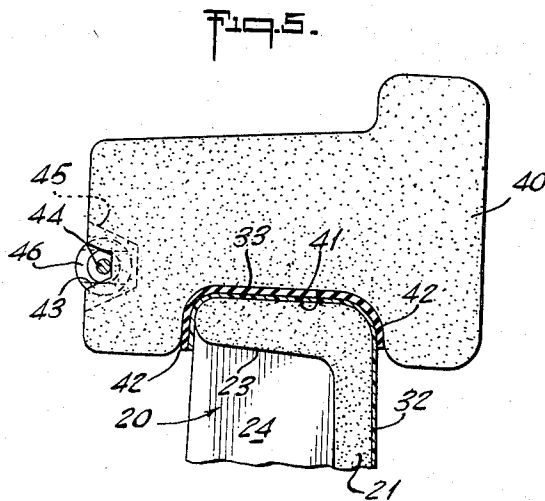
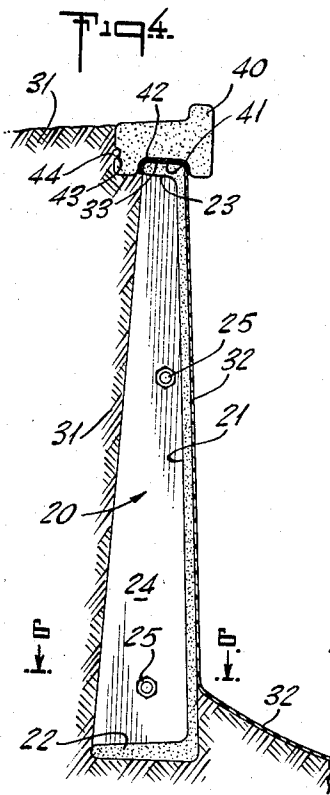


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A. G. LORIMER
SWIMMING POOLS AND METHOD OF
CONSTRUCTING THE SAME

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INVENTOR
ALLAN GORDON LORIMER
BY *John M. Cole*
ATTORNEY

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SWIMMING POOLS AND METHOD OF CONSTRUCTING THE SAME

Allan Gordon Lorimer, Douglaston, N. Y., assignor to
Malcolm A. Vendig, Sands Point, N. Y.

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The present invention relates to swimming pools, and more particularly to outdoor swimming pools for private or family use.

The construction of outdoor swimming pools for private or family use has heretofore been greatly restricted on account of the cost. By use of the present invention, pools can be placed wherever there is sufficient land area. A relatively shallow excavation will provide back fill to hold the pool structure in place.

In carrying out the present invention, an excavation of the desired size and vertical contour is made in the ground. A wall made of prefabricated panels of reinforced concrete or other suitable material of proper size is assembled on the site, a waterproof liner of proper shape is placed inside the walls, and a prefabricated, sectionalized coping of proper size is placed on top of the wall and rim of the liner. The coping is held in place by a tie cable. Back fill outside the wall panels holds the panels against spreading. The contour of the pool is preferably inwardly concave to provide a continuous arch to resist external pressure.

The accompanying drawings show, for purposes of illustrating the present invention, one embodiment in which the invention may take form, it being understood that the drawings are illustrative of the invention rather than limiting the same.

In these drawings:

Figure 1 is a top plan view of the swimming pool;

Figure 2 is a longitudinal vertical section on the line 2—2 of Figure 1;

Figure 3 is a fragmentary side view showing a tightening cable and turnbuckle;

Figure 4 is an enlarged fragmentary sectional view on the line 2—2 of Figure 1;

Figure 5 is a still further enlarged sectional view on the line 2—2 of Figure 1;

Figure 6 is a horizontal, sectional view on a plane indicated at 6—6 in Figure 4; and

Figure 7 is a transverse view on the line 7—7 of Figure 1.

While the side walls of the swimming pool may be placed entirely above the existing grade of the ground, it is usually preferable to make an excavation for a part or all of the depth of the pool. In Figures 2 and 7, an existing grade is indicated by the dotted line 10—10. The complete excavation may be made initially or a ditch dug where the peripheral walls of the pool are to be placed. The bottom is carefully leveled where the wall is to be placed.

The peripheral wall of the pool is made up of a number of panel units 20 of metal, reinforced concrete or plastic, of suitable height, width and contour. As shown in Figures 4 and 6 these panel units have a substantially vertical, inwardly concave inner wall 21, a relatively wide bottom flange 22, a narrow top flange 23 and side flanges 24—24. These side flanges are provided with holes to receive rust resistant tie-bolts 25 and spring lock washers 25'. The vertical height of the panels is such

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as to provide a pool of suitable depth, for example, 3 feet at the shallow end. The lock washers allow limited expansion of the tank under excessive pressure.

The panel units are preformed and of shapes when assembled to form portions of cylinders. At the large diameter end of the pool such sections are assembled about an arc of 180°, as indicated at the left of Figure 1. Panel units for the narrow or right hand end of the pool will be constructed to form a cylindrical arc of shorter radius and less angle, as indicated at 26, Figure 1. The sides of the pool employ similar panels 27, but of much greater radius of curvature. Thus the assembly of panels presents the continuous arched construction well adapted to resist external forces.

A suitable pool 36' long, 22'6" wide may employ thirteen panels at the large end, five panels at the short end, and eight panels on each side.

After the side panels have been secured together to give the pool its general form and shape the excavation is completed to give the pool bottom the desired contour. The preferable contour is indicated in Figures 2 and 7. Here the pool has a relatively shallow portion at the right and a deeper portion at the left. The bottom of the pool is very carefully prepared by the use of suitable templates which relate the bottom of the pool to the upper edge of the assembled side panels.

Back fill indicated at 31 is placed outside the assembled panels. This is solidly packed back of these panels and in the cells formed by the flanges so that the assembled structure is thoroughly protected against spreading due to internal pressures.

After the panels have been arranged in place and the excavation made of the desired contour, a plastic liner 32, preferably made of heavy gauge vinyl sheet, is placed into the pool. This liner is made accurately to size so that it fits the bottom of the pool, and the inner faces of the panels, and extends outwardly about the upper flanges of the side panels, as indicated at 33, Figures 4 and 5.

Coping blocks 40 with downwardly facing channels indicated at 41 are placed on top of the flanges 23 and the side walls. Gaskets 42 protect the rim portion 33 of the liner. These coping blocks are short annular sections centered about the same centers as the panels on which they rest and preferably of greater angular width. They are arranged as shown in the drawing to slightly overhang the side panels both inside and outside. These blocks have external grooves 43 adapted to receive a cable 44. The cable extends to the coping blocks and one of the blocks, such as the one at the left of Figure 1, and shown in detail in Figure 3, has an enlarged cutout or notch 45, to accommodate cable clamps 46 whereby the cable may be tightened.

In ordinary use the swimming pool will be filled with water up to the top of the plastic liner. Usual pool accessories, such as ladders, diving stands and recirculating systems may be employed if desired. The pool is preferably kept filled during the winter as this causes no damage to the liner or change in the contour of the bottom of the pool. The pool may also be used as a skating rink. When so used it is preferable to fill it up with water to a level above the top of the plastic liner so as to protect the liner against injury.

Since it is obvious that the invention may be embodied in other forms and constructions within the scope of the claims, I wish it to be understood that the particular form shown is but one of these forms, and various modifications and changes being possible, I do not otherwise limit myself in any way with respect thereto.

What is claimed is:

1. An outdoor swimming pool having an earth bottom, a plurality of panels extending upwardly from said bot-

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tom at the periphery thereof and disposed side by side to form an enclosing wall, an earth embankment outside the wall to resist outward displacement of said wall, a water tight liner fitting said enclosing wall and bottom and extending outwardly over the tops of the side wall panels, and coping units forming a continuous coping covering the outwardly extending portion of the liner, said coping units having downwardly opening channels to fit about the tops of the side panels, and having a tie cable about the coping units to hold them in place.

2. An outdoor swimming pool having an earth bottom, a plurality of panels extending upwardly from the pool bottom at the periphery thereof and having smooth inner faces and outwardly extending side, top and bottom flanges, bolts extending through adjacent side flanges of adjacent panels to secure the panels side by side and form an enclosing wall, a water tight liner fitting the bottom, and the inner faces and top flanges of the panels, a plurality of coping sections having downwardly opening channels fitting about the top of the side panels and top of the liner and forming a continuous coping, a binding cable about the coping sections, and an earth embankment outside the side panels.

3. In swimming pool construction, a generally vertical retaining wall outlining a pool area and a flexible pool wall carried by said retaining wall, said retaining wall being formed of a plurality of mated sections, means to join said sections together to form a continuously arched closed figure, said wall being seated on the ground and interiorly isolating an area of the ground, said retaining wall sections being formed with outwardly extending base flanges, said flanges extending throughout the length of their wall sections and an earthwork embankment bordering the outer side of said wall and overlying said base flanges for assisting in maintaining said wall in place, the ground within said retaining wall being contoured for the reception of the bottom of said flexible pool wall and said flexible pool wall including a side and a bottom, said flexible pool wall being seated within said retaining wall with said bottom engaged with and following the contour imparted to the ground and the upper portion of said side of said pool wall overlying the upper end of said retaining wall, and means to retain said upper portion in place on said retaining wall.

4. In swimming pool construction, a generally vertical retaining wall outlining a pool area and a flexible pool wall carried by and positioned within said retaining wall, said retaining wall being formed of a plurality of mated prefabricated sections, all of said sections being horizontally concavely curved, wide horizontally outwardly extending flanges extending from the bottom of said sections, vertically outwardly extending flanges extending from the sides of said sections and throughout the height thereof, said horizontal flanges extending to and being joined to said side flanges means to join said side flanges of adjacent sections together to hold said sections together and form a closed figure, said retaining wall being seated directly on the ground with the inner concave faces of said sections directed inwardly, said wall interiorly isolating an area of the ground, and an earthwork embankment bordering the outer side of said retaining wall and filling the cells formed by said flanges for assisting in maintaining said wall in place, said isolated ground area bordered by said wall being contoured for the desired pool depth and said flexible pool wall including a side and a bottom, said flexible pool wall being seated within said retaining wall with said pool bottom engaged with and following the contour imparted to said ground area, the upper portion of the side of said pool wall overlying the upper end of said retaining wall, and means to retain said upper portion in place on said retaining wall.

5. In swimming pool construction, a ground area vertically contoured to the desired pool bottom formation, a flexible pool wall having a portion seated on said ground and following said contouring and having a bordering upwardly extending portion, a vertically extend-

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ing rigid retaining wall seated directly on the ground and surrounding said contoured ground area, said retaining wall being formed of mated sections and said sections being joined together to form a closed figure convexly curved throughout, said bordering portion of said flexible pool wall extending upwardly with respect to said retaining wall and engaged with the top thereof to retain said pool wall in place, said sections of said retaining wall being formed with wide outwardly extending flanges on the bases thereof and with outwardly extending flanges at their sides extending upwardly from said base flanges, said flanges forming outwardly opening cells on the outer side of said sections, and an earthwork embankment built up around said retaining wall and substantially filling said cells to assist in maintaining said retaining wall in upright position.

6. The method of forming a prefabricated outdoor swimming pool which comprises, forming a retaining wall in the form of a closed figure out of prefabricated wall sections having their inner surfaces horizontally concavely curved and having outwardly extending bottom and side flanges, locking said flanges together to maintain said wall in position, backfilling against the outside of said wall panels and within the cells formed by said flanges to assist in preventing said panels from spreading, after said flanges have been secured together, vertically contouring the ground within said retaining wall to the desired pool bottom conformation, introducing a flexible pool wall, having a bottom and a side, within said retaining wall with said bottom following the contouring of the ground within said retaining wall and with said pool side lying up along the inside of said retaining wall, and securing the top of said pool side in place over the top of said retaining wall.

7. The method of forming a prefabricated outdoor swimming pool which comprises, forming a retaining wall receiving surface on the ground in the shape of a closed figure, seating prefabricated mated retaining wall sections having outwardly extending bottom and side flanges on said receiving surface, locking the opposed flanges of adjacent sections together to form a retaining wall convexly curved throughout and to maintain said wall in position, backfilling against the outside of said wall sections and within the cells formed by said flanges to assist in maintaining said wall in position, contouring the ground within said retaining wall to the desired pool bottom conformation, introducing a flexible pool wall, having a bottom and a side, within said retaining wall, with said bottom following the contouring of the ground within said retaining wall and said side lying up along the inside of said retaining wall, and securing the top of said pool side in place over the top of said retaining wall.

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