March 17, 1964 K. L. STIER 3,124,905

SWIM POOL WALL PANEL STRUCTURE

Filed Dec. 12, 1960

FIG. 1

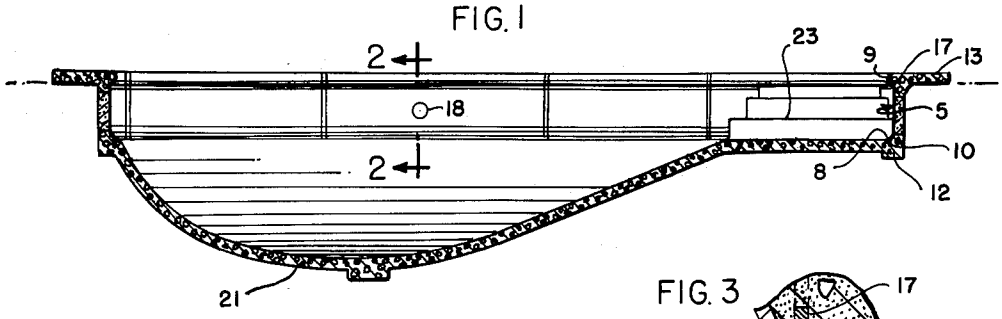


FIG. 2

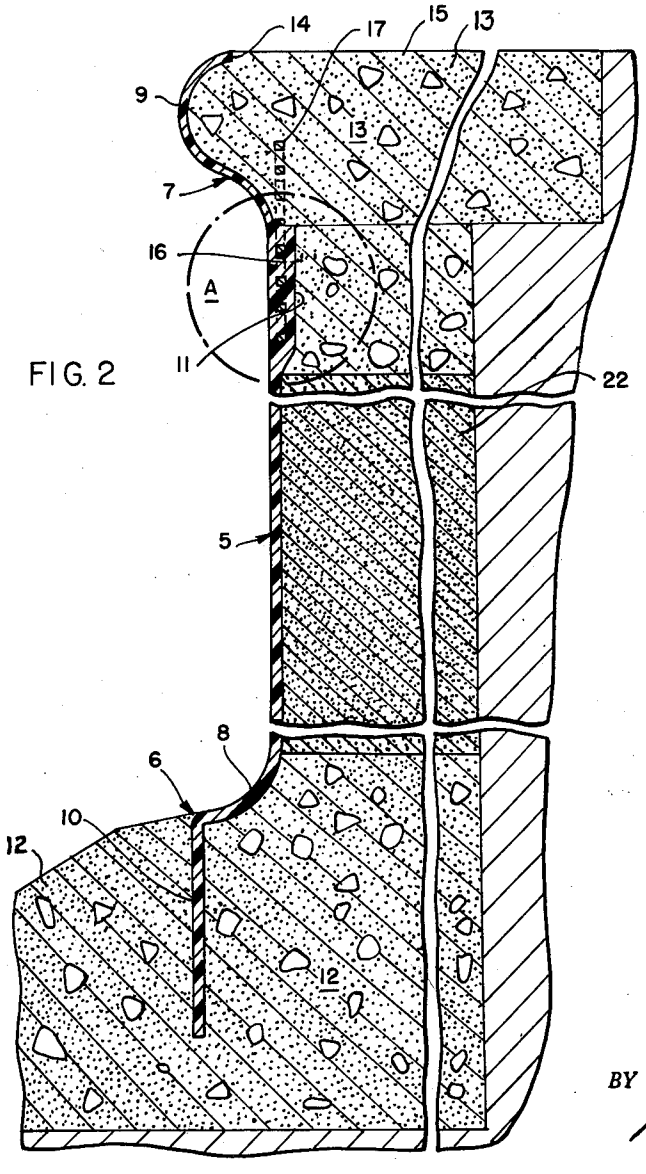
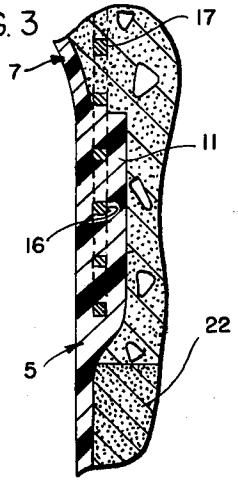


FIG. 3



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SWIM POOL WALL PANEL STRUCTURE

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This invention relates to wall panel structures for the construction of swimming pools.

The main objects of this invention are to provide an improved side wall panel structure for use in the construction of swimming pools; to provide an improved panel structure especially adapted for the formation of the vertical walls of a swimming pool; to provide an improved panel structure of this kind of comparatively rigid character molded from reinforced plastic materials for anchoring in the concrete foundation and perimetrical walk; to provide an improved panel structure of this kind contoured to form a sloping concave juncture of the vertical wall and the bottom of the pool and a rounded overhanging top perimetrical coping; and to provide an improved panel structure of this kind of such simple design as to make the manufacture thereof very inexpensive and the use thereof extremely facile.

A specific embodiment of this invention is shown in the accompanying drawings in which:

FIGURE 1 is a miniature cross-sectional view of a swimming pool formed with wall panels constructed in accordance with this invention;

FIG. 2 is an enlarged, vertical cross-sectional view of the same, with the parts broken away, as taken on the plane of the line 2—2 of FIG. 1; and

FIG. 3 is a further-enlarged, fragmentary sectional view of the portion within the circle "A" of FIG. 2.

The essential concept of this invention involves a panel-structure of molded fiber glass reinforced plastic material the bottom and top portions of which are contoured to provide an inwardly curved portion adjacent its bottom end to form a rounded juncture of the side walls and the bottom of the pool and an outwardly-facing C-shaped rim at its top margin to form a curved overhanging coping around the top perimeter of the pool, with integrated extensions, respectively, adjacent these contoured portions for anchoring the panel-structure to a concrete bottom of the pool and to a top bordering walk made of poured concrete.

A swimming pool panel-structure embodying the foregoing concept comprises a flat middle portion 5 with opposite end portions 6 and 7 respectively shaped to provide a lower inwardly-curving rim 8 and an upper outwardly-facing rim 9, with the adjacent integrated extensions 10 and 11 for anchoring the panel structure in a concrete base 12 and a bordering walk 13 (see FIG. 1). By well-known procedures such a panel-structure is premolded from plastic material, which may be of the polyester type, reinforced with fiberglass. The dimensions of such a panel-structure, obviously, may vary to permit the construction of swimming pools with side walls of different depths, as occasion may require.

The lower curved end portion 6, with its rim 8 is so located, relative to the middle portion, that when each panel-structure is set in place, with the bottom extension 10 anchored in the concrete base 12, this rim 8 forms a concave juncture between the vertical wall of the pool and the bottom thereof. Such a curved juncture lessens the likelihood of sediment accumulating around the bottom perimeter of the pool, as it would in pools with right-angle corners. Moreover, such a curved juncture between the side walls and the bottom of the pool facilitate cleaning all accumulations incident to the use of the pool by the conventional brushing and vacuum cleaning procedures.

As shown, the upper end margin 7 of the panel is curved inwardly and then outwardly to form a rim 9, which, when anchored to the walk 13, forms a half-round overhanging coping around the perimeter of the pool, with the outwardly projecting terminal edge 14 of this rim 9 seated flush with the top face 15 of the walk 13.

The lower anchoring extension 10 is solidly and fixedly embedded in the concrete bottom 12 of the pool when the concrete bottom is poured and the upper face of pool bottom is so formed as to be a continuation of the concave rim 8, sloping away from the bordering portion 6 toward the center of the pool as indicated in FIGS. 1 and 2.

The anchoring extension 11 extends upwardly, parallel to the middle panel portion 5, from directly below the juncture thereof with the upper end portion 7 and this extension is preferably made of sufficient length to extend to about half way between the upper and lower edges of the coping portion 9. In the form shown the extension 11 comprises a strip of expanded metal, or perforated plate 17, which extends across the top portion of the panel and is of sufficient width that about half its width, as at 16, will overlap the flat outer surface of the panel portion 5. This plate or strip 17 is molded integrally into the panel structure, as shown in FIG. 3, the plastic material of the panel filling the open spaces of the area 16 to provide a strong permanent bond. This extension, when embedded in the concrete of the walk 13, forms a fixed and permanent tie between the plastic pool panel and the solid collar around the pool top edge provided by the walk 13.

Certain panel-structures of this kind may have a part of the middle portion molded to form a concave or cup-like depression to receive a light fixture 18 in the middle of the wall portion 5. This, however, is a well known procedure and need not be further described.

Using panel-structures of this kind a pool may be constructed in substantially the following manner:

After the necessary excavation 21 is made, the required number of panel-structures to complete the wall of the pool are suspended from a suitable scaffolding, or other means (not here shown), supported from the ground surrounding the excavation 21, in a manner well-known to contractors experienced in the construction of swimming pools, the panels being secured together laterally and positioned to follow the desired outline of the pool. The lower and upper ends of the extensions 10 and 11 would be staked or otherwise secured respectively to the ground below and to the supporting means above, in a manner usually employed in constructions of this type. Such securing of these extensions 10 and 11 not only insures the panel-structures being perfectly vertical but also secures them against shifting during the subsequent pouring of the concrete and/or the tamping in the back fill where such is used.

Incident to such positioning of the requisite panel-structures the abutting edges of adjacent panels, which are usually integral flanges extending rearwardly from the panel face, would have a conventional adhesive applied, to effect a water-tight bonding of panel to panel, and would then be bolted together.

The concrete forming the bottom of the pool is then poured and is so applied as to firmly embed the bottom extensions 10 of the wall panels, as shown in FIG. 2, the top surface of the concrete being appropriately smoothed and formed to provide the desired contour for the pool bottom and to extend flush with the bottom edge of the curved portion 8 of the panels so as to provide, in effect, a continuation of the same. After the bottom of the pool has become set and hardened a back-fill 22, of sand or other suitable material, is poured into the space between the panels and the sides of the excavation, so as to adequately support the outer or rearward side of the

panels, and then the marginal collar or walk 13 is formed by pouring concrete on top of the back-fill. The back-fill is generally extended to a point adjacent the coping formation of the panel and where the concrete for the walk 13 is poured it completes the filling of the surrounding the top of the pool, completely embedding the upper extension 17, of the main panel wall 5, and filling the space behind the curved coping portion of the panel, as shown in FIG. 2.

The main advantages of this invention reside in the improved panel construction wherein the panel itself provides a rounded corner at the junction with the pool bottom thereby obviating the need for time consuming, and hence costly, shaping procedures that would otherwise be required of the concrete workers where such rounded corners are desired; in the form of the top end of the panel wherein the panel itself provides the form and finish for an overhanging coping around the top edge of the pool; and in the construction of the top end of the panel whereby an integral portion of the panel becomes solidly embedded within the body of a concrete collar and walk, bordering the top of the pool, at the time the collar is formed, thereby assuring a permanent and water tight connection between the collar and the walls of the pool.

Although but one specific embodiment of this invention has been herein shown and described it will be understood that details of the construction shown may be altered or omitted without departing from the spirit of the invention as defined by the following claims.

I claim:

1. A prefabricated reinforced plastic panel-structure for use in constructing the vertical side wall of an excavated swimming pool, the panel-structure comprising, a flat middle portion extending the major part of the panel length and terminating in curved top and bottom end portions, the bottom end portion of the panel being forwardly curved from the plane of the flat middle portion to form an inwardly-facing concavely rounded section and the top end portion of the panel being curved forwardly from the plane of the middle portion and then rearwardly to form a rearwardly-facing C-shaped rim projecting forwardly from the plane of the middle portion, and oppositely-disposed integrated extensions adjacent the curved top and bottom ends of the panel and extending parallel with the plane of the said middle portion for embedding in a bordering walk and a concrete base, respectively, the extension adjacent the top end of the panel being integrated to the rearward face thereof below the bight of the C-shaped rim and projecting upwardly to extend partially across the bight of the rim.

2. A unitary plastic panel-structure for use in constructing the vertical side wall of an excavated swimming pool, the panel-structure comprising, a flat middle portion extending the major part of the panel length and terminating in specially-formed top and bottom end portions, the bottom end portion being curved forwardly from the plane of the flat middle portion to form an inwardly-facing concave rim and the top end portion being curved forwardly from the plane of the middle portion and then rearwardly to form a rearwardly-facing C-shaped rim projecting forwardly from the plane of said middle portion, a depending anchoring extension integrated with the edge of the bottom rim, and an upwardly-disposed perforated-plate anchoring extension integrally molded onto the rearward face of said middle

portion and extending partially across the bight of the said rearwardly facing C-shaped rim.

3. An excavated swimming pool the vertical-defining wall of which comprises a plurality of laterally abutting panel-structures surrounding a supporting concrete base and integrated at their top ends with a bordering concrete walk, each panel-structure comprising a flat middle portion terminating in specially-formed top and bottom end portions, the bottom end portion being curved forwardly and then extending downwardly to form a concavely rounded corner having a vertically downward extension embedded in the concrete base, the concave face of said bottom end portion terminating flush with the adjacent upper face of the said concrete base, the upper end portion of the panel being curved forwardly and then rearwardly to form a rounded forwardly projecting rim having its upper edge flush with the surface of the bordering walk, the said rim forming a half-round overhanging coping around the perimeter of the pool, and an upwardly-disposed extension integrated with the said middle portion of the panel and spaced rearwardly of the said rim, the said upwardly disposed extension being embedded in the concrete of the said bordering walk.

4. An excavated swimming pool the vertical-defining wall of which comprises a plurality of laterally abutting panel-structures extending upwardly from a supporting concrete base and having their top ends integrated with a bordering concrete collar, each panel-structure comprising a flat middle portion terminating in specially-formed top and bottom end portions, the bottom end portion of each panel being curved forwardly from the plane of said middle portion to form a concavely rounded corner and then turned downwardly to provide an extension embedded in the concrete base, the concave face of said rounded corner terminating flush with the adjacent upper surface of the concrete base, the upper end portion of each panel being curved forwardly and then rearwardly to form a rounded forwardly projecting rim having its upper edge flush with the surface of the bordering walk, the said rim forming a half-round overhanging coping around the perimeter of the pool, an upwardly-disposed extension comprising a strip of perforated metal integrated with the back side of the middle portion of each panel and extending thereacross parallel with the plane of said middle portion, said upwardly disposed extension projecting partially across the open side of said forwardly projecting rim and being embedded in the concrete of said collar, and said collar filling the open side of said rim.

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