

[54] **SWIMMING POOL**

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[63] Continuation of Ser. No. 736,446, June 12, 1968, abandoned.
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[51] Int. Cl. E04h 3/16, E04h 3/18
[58] Field of Search 4/172, 172 P, 172 VM, 172 C; 52/537, 169, 245

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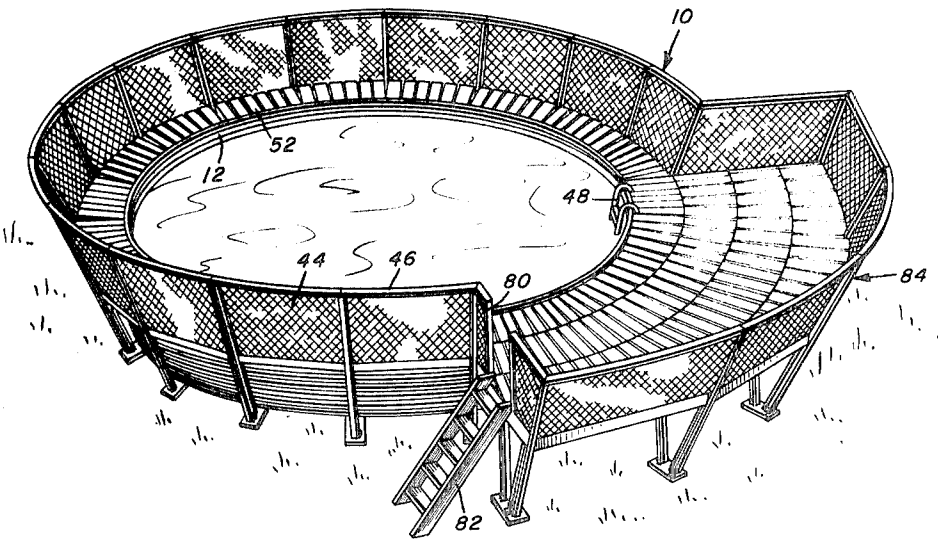
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[57] **ABSTRACT**

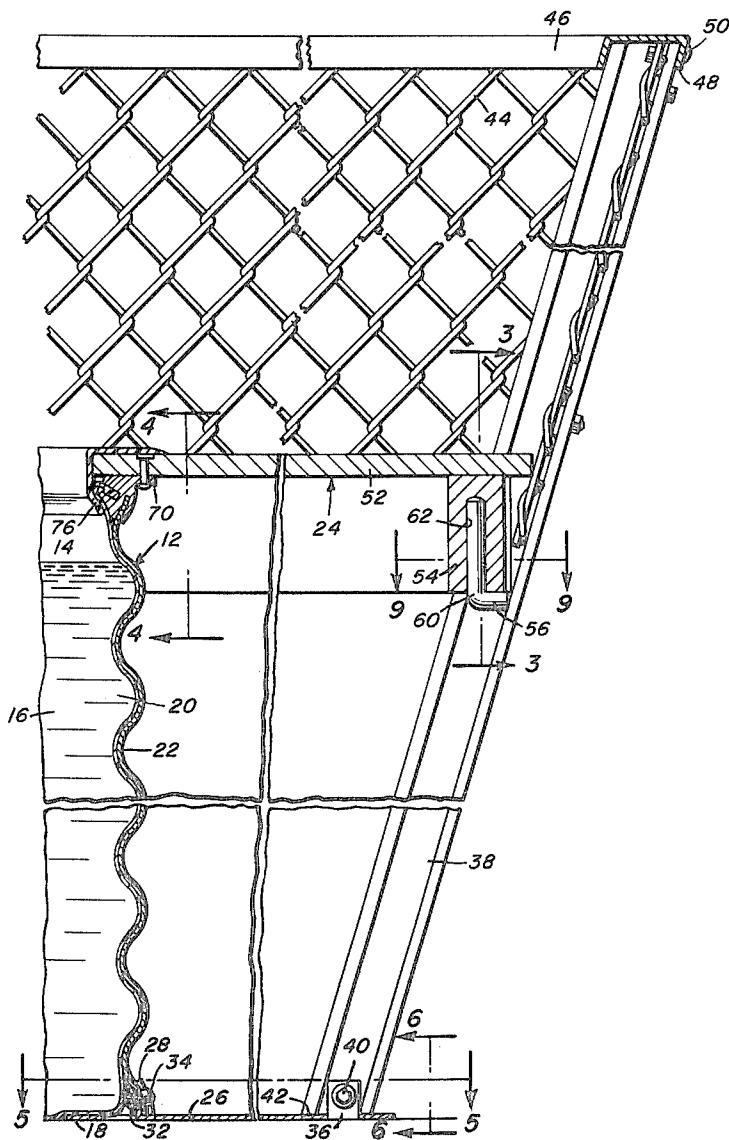
A swimming pool incorporating a peripheral wall corrugated horizontally and peripherally for retaining a flexible liner and forming the support for the inner edge of a peripheral deck. A plurality of supporting elements are connected with the bottom of the peripheral wall and extend radially outwardly therefrom together with upstanding and outwardly inclined outer posts connected thereto for supporting the outer periphery of a peripheral deck and also supporting a retaining fence.

6 Claims, 10 Drawing Figures



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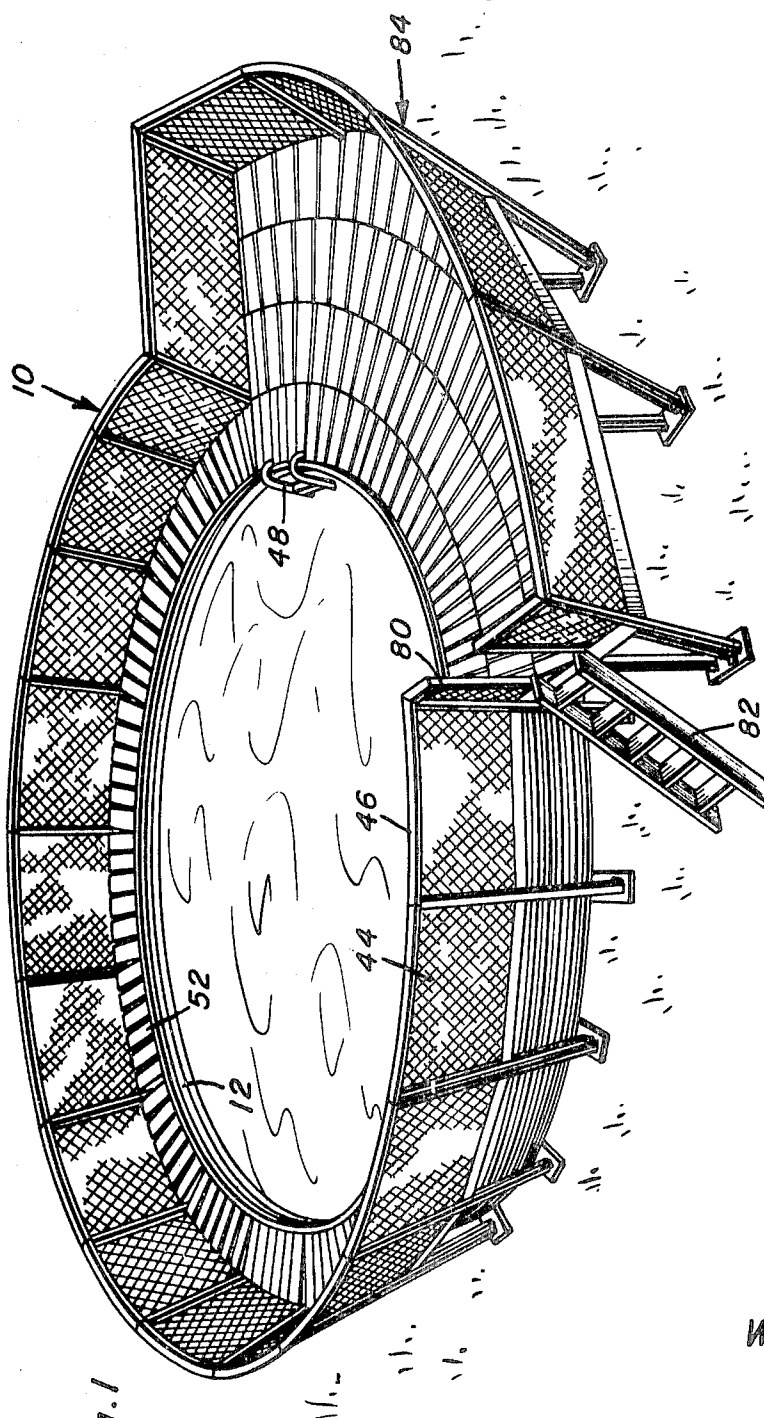


Fig. 1

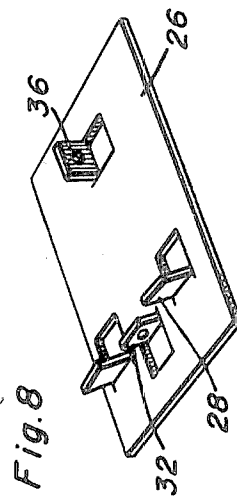


Fig. 8

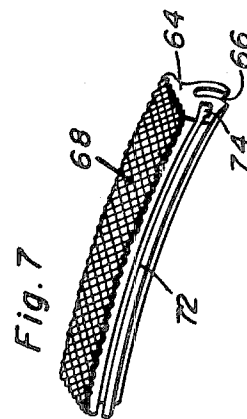


Fig. 7

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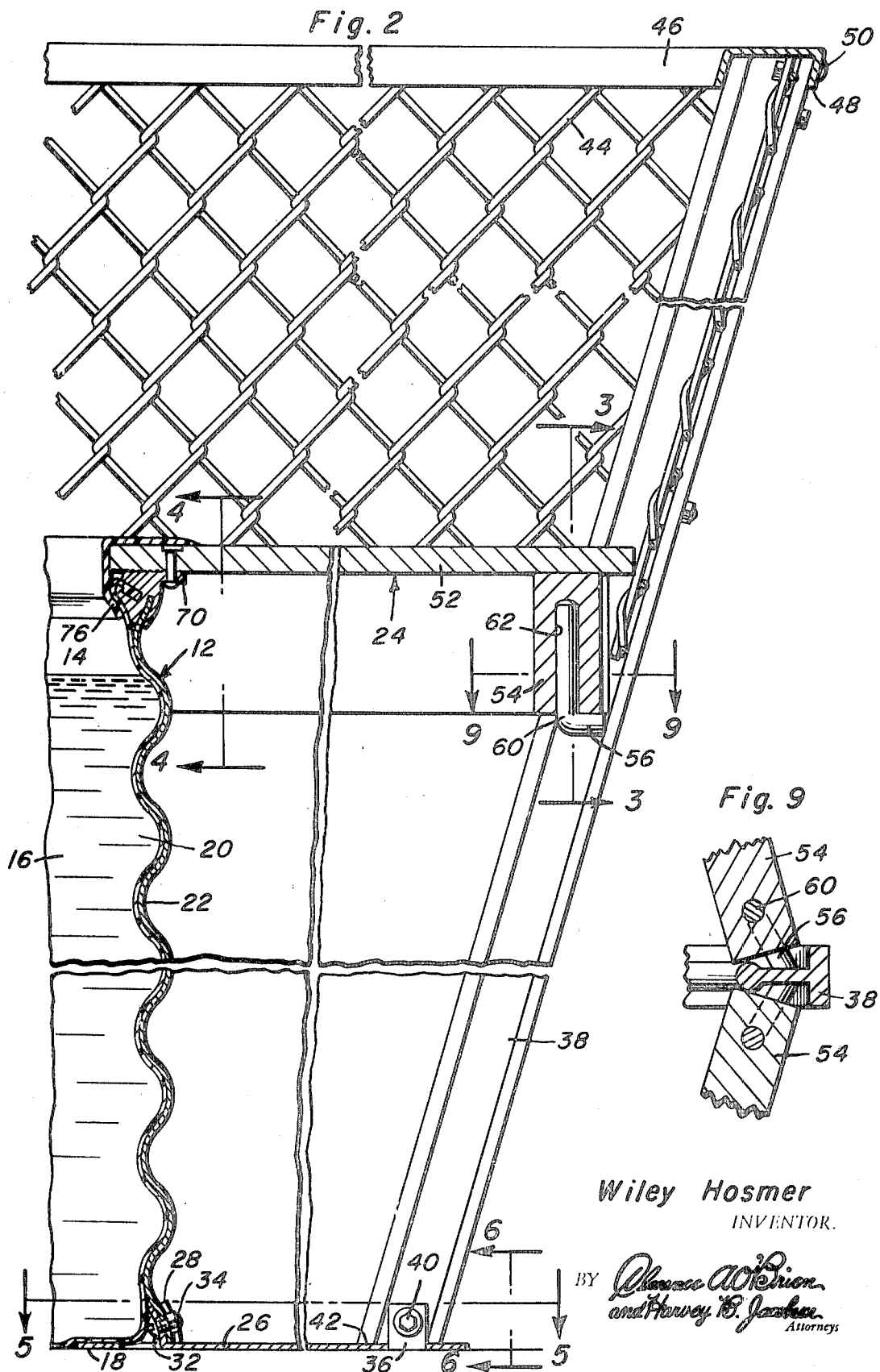


Fig. 3

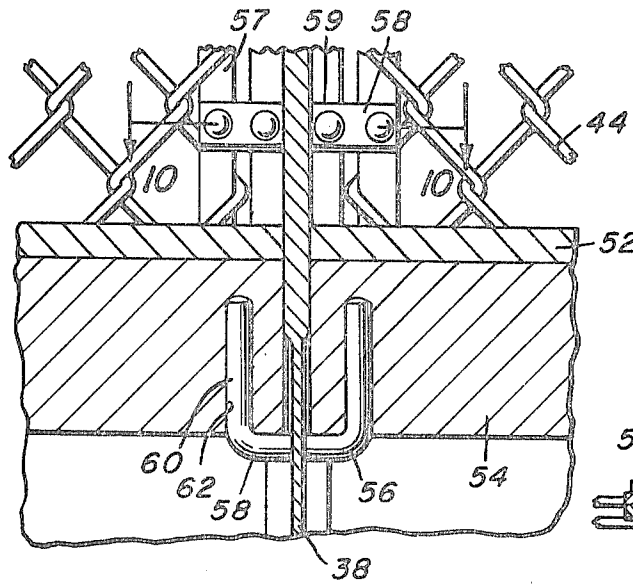


Fig. 10

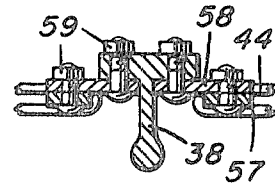


Fig. 4

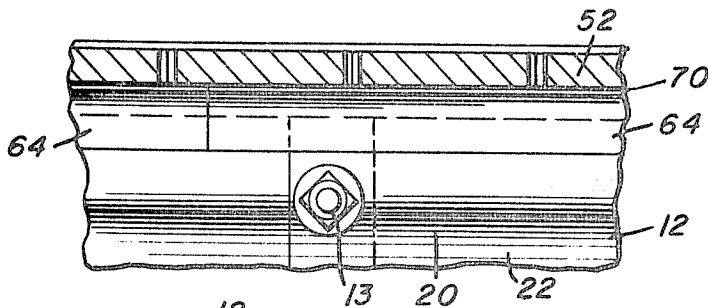


Fig. 5

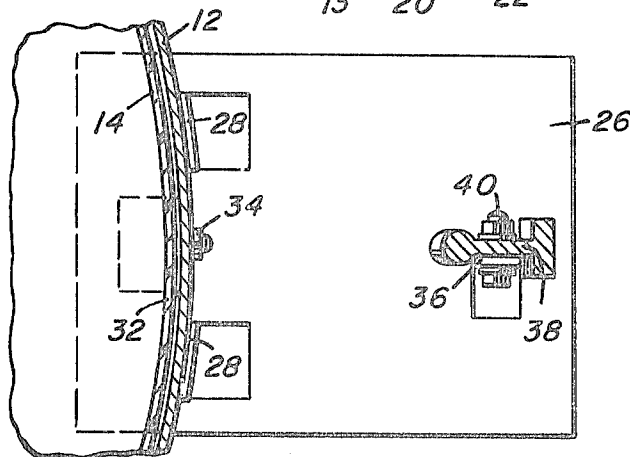
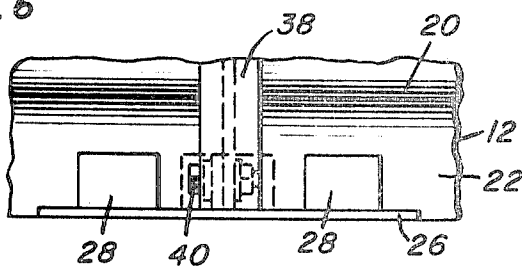


Fig. 6



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SWIMMING POOL

This application is a continuation of application Ser. No. 736,446 filed June 12, 1968 and now abandoned.

A number of developments have been made in the construction of swimming pools which do not require the extensive excavation of the site nor the use of concrete, molds or gun-type devices for installing cementitious materials. Such pools basically include a peripheral supporting structure and a flexible liner having the upper edge thereof attached to the supporting structure with the liner serving to retain the water. Such devices are normally mounted on the surface of the ground with very little, if any, excavation.

The present invention generally relates to a swimming pool which may be supported on the ground surface or partially recessed or substantially completely recessed in an excavation if desired with it only being necessary to provide a bottom surface corresponding to the bottom surface desired in the pool inasmuch as the flexible liner will conform with the contour of the supporting surface which enables a variation in the depth of the pool by employing the flexible liner having a particular shape or sufficient excess material to enable it to conform with a supporting surface having variations therein.

An object of the present invention is to provide a swimming pool constructed with a peripheral wall which forms a major supporting component of the pool with the peripheral wall being constructed of sheet material having horizontal or peripheral corrugations to rigidify the wall to enable it to support the inner edge of a peripheral deck and also support the upper edge of the flexible liner.

Another object of the present invention is to provide a swimming pool incorporating a peripheral supporting wall together with a plurality of circumferentially spaced radially extending supporting plates adapted to engage a supporting surface together with a plurality of upwardly and outwardly inclined posts attached to the outer end portions of the supporting plates and extending upwardly beyond the outer edge of the peripheral deck for supporting the outer edge of the peripheral deck and at the same time providing a support for a peripherally extending and upstanding retaining fence or the like.

Still another object of the present invention is to provide a swimming pool in accordance with the preceding objects which includes a segmental peripheral wall to enable ease of transport and assembly at the site and a novel retainer for the upper edge of the liner which engages the upper edge of the peripheral wall and also supportingly engages the inner edge of the peripheral deck.

Still another important feature of the present invention is to provide a swimming pool which is simple in construction, easy to install, rigid and long lasting and relatively inexpensive to manufacture.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a perspective view of the swimming pool of the present invention;

FIG. 2 is a vertical sectional view of one portion of the swimming pool, on an enlarged scale, illustrating the structural relationship between the components of the invention;

FIG. 3 is a detailed sectional view taken substantially upon a plane passing along section line 3—3 of FIG. 2 illustrating the interconnection between the upwardly and outwardly inclined posts and the outer periphery of the peripheral deck;

FIG. 4 is a detailed sectional view taken substantially upon a plane passing along section line 4—4 of FIG. 2 illustrating further structural details of the peripheral wall and the manner in which it is supportingly engaged with the inner periphery of the deck;

FIG. 5 is a plan sectional view taken substantially upon a plane passing along section line 5—5 of FIG. 2 illustrating the specific construction of one of the supporting plates and the

relationship of the peripheral wall and supporting posts thereto;

FIG. 6 is a detailed elevational view taken substantially along the plane of reference line 6—6 of FIG. 2 illustrating the specific connection between the supporting plates and supporting posts;

FIG. 7 is a fragmental perspective view of a portion of the saddle member which engages the upper edge of the peripheral wall and also supports the upper edge of the flexible liner;

FIG. 8 is a perspective view of the supporting plate;

FIG. 9 is a detailed sectional view taken along section line 9—9 on FIG. 2 illustrating the connection between the post and stringers; and

FIG. 10 is a detailed sectional view taken along section line 10—10 on FIG. 3 illustrating the connection between the posts and fence.

Referring now specifically to the drawings, the numeral 10 generally designates the swimming pool construction of the present invention which includes a peripheral wall structure generally designated by the numeral 12 and a flexible liner 14 disposed inwardly thereof and forming the bottom of the pool for retaining a quantity of water 16 therein. The flexible liner may be constructed of any suitable plastic material having waterproof characteristics and sufficiently flexible to enable the liner to conform with the contours of the wall 12 and also the contours of the supporting ground surface 18 on which it rests with it being pointed out that the ground surface 18 may be smooth or provided with a recess to provide a deeper portion in the pool if desired.

The peripheral wall 12 is constructed to define a substantially cylindrical wall preferably about 4 feet high. The wall is segmental with overlapping edges secured by suitable fasteners 12 with each segment being any suitable length to enable easier shipment and transport thereof to the site so that it may be readily assembled by any suitable means such as by a plurality of fasteners such as bolts, rivets or the like. The peripheral wall 12 includes a plurality of horizontally disposed corrugations defining outwardly facing ridges 20 and valleys 22 which may be of any suitable shape and configuration and the corrugations serve to rigidify the construction of the wall 12. The peripheral wall 12 is constructed of sheet material, preferably sheet metal having a sufficient gauge or thickness to provide the retaining support for the water 16 and liner 14 and also to provide vertical support to the inner peripheral edge of a peripheral deck 24 which extends throughout the periphery of the pool.

The bottom of the wall 12 is provided with a plurality of supporting plates 26 each of which has its inner edge underlying the periphery of the wall 12 and its outer edge disposed radially outwardly therefrom. Each plate 26 is provided with a pair of upwardly struck lugs 28 adapted to engage the outer surface of the wall 12 and a centrally disposed upwardly struck apertured lug 32 adapted to engage the inner surface of the wall 12 for receiving a fastener assembly 34 such as a bolt and nut or the like to enable the supporting plates 26 to be connected with the wall 12. Thus, by providing preformed apertures in the bottom edge of the wall 12, the supporting plates 26 will be located peripherally in properly circumferentially spaced relation around the wall 12. The lugs 28 and 32 will conform generally with the curvature of the lowermost corrugation on the wall 12 and thus be securely and rigidly connected thereto.

The outer portion of the supporting plate 26 is provided with an upstanding apertured lug 36 which is attached to and supports an upstanding and outwardly inclined post 38 by a suitable fastener such as a bolt and nut assembly 40 or the like. The post 38 has the bottom edge thereof slightly inclined to engage the upper surface of the supporting plate 26 as indicated at 42 and the upper end thereof extends continuously above the horizontal plane of the top edge of the wall 12. In cross-sectional configuration, the post 38 has a generally I-shape with a central web and a flange on the outer edge

thereof and a rodlike enlargement at the inner edge thereof to provide a rounded inner edge inasmuch as the post 38 forms a support for a mesh-type retaining fence 44 above the peripheral deck 24. The upper ends of the post 38 are interconnected by a railing 46 of downwardly opening channel-shaped configuration with inclined flanges 48 engaging the inner and outer edges of the post 38 respectively with fasteners 50 securing the outermost flange 48 to the outer flange on the post 38.

The decking 24 is in the form of a plurality of slats 52 in the form of redwood boards or the like which are slightly spaced apart and which extend radially from the top edge of the wall 12 to supporting stringers 54 at their outer ends which are supported by substantially U-shaped or channel-shaped rods 56 that are rigid with the post 38 as illustrated in FIG. 3. In this construction, the U-shaped rod 56 actually constitutes a pair of substantially right angular members which are continuous through the web of the post to enable replacement thereof. The upwardly extending free ends 60 of the supporting members 56 extend into corresponding sockets 62 formed in the stringers 54 which are straight members extending between the posts with the ends thereof inclined to engage the surfaces of the post or sufficiently spaced to receive the posts therebetween with the upstanding members 60 being substantially vertical and slidable into the sockets 62. The weight of the decking is sufficient to hold the strings 54 in place and the outer ends of the planking or decking 52 are secured to the stringers 54 by any suitable fastening nails or the like with the decking 52 extending beyond the stringers 54 at least in the center portion of the stringers 54 and terminating against the inner edge of the mesh fence 44 which extends downwardly below the horizontal plane of the decking 52. The mesh wire fencing 44 is secured to the post 38 by vertical strap 57 threaded through the mesh and connected with the post by short straps 58 and fasteners 59.

The inner ends of the planking or decking 52 are supported by and connected to saddle supports or coping 64 which include a downwardly opening recess 66 which is vertically curved to conform with the uppermost corrugation on the wall 12 so that when the uppermost edge of the wall 12 is received in the groove 66, the top surface 68 of the saddle support 64 is substantially horizontal and engages the inner bottom surface of the decking 52. The top surface 68 of the saddle 64 is serrated or roughened to provide interengagement with the decking and suitable fasteners may extend up through the inner flange 70 on the saddle 64 into the decking or planking 52.

The inner edge of the saddle 64 is provided with an inwardly opening slot 72 which extends downwardly and inwardly and is provided with an enlarged or undercut inner portion 74 which engages and retains an enlarged rib or bead 76 on the upper edge of the flexible liner 14 as illustrated in FIG. 2. The flexibility and resiliency of the material from which the liner is constructed enables the bead 76 to be compressed and forced into the groove 72 after which it expands into the enlarged or undercut portion 74 thereof for anchoring the upper end of the liner 14 to the saddle support 64.

As illustrated, the handrail 46 is arcuately curved and constructed in segments with the segments also being of convenient length to enable ease of transport, shipment and the like. The entire structure is preferably constructed in segments although continuous elements may be provided if desired. Also, as illustrated in FIG. 1, a portion of the pool may be radially enlarged by providing an offset portion for the deck and a corresponding offset in the fence arrangement and supporting post arrangement. In this construction, the intermediate post will terminate at the supporting strings and only the outer post will extend up to the handrail 46. Also, one portion of the radially extending fence may be provided with a gateway or opening 80 having a ladder 82 provided therefor with the ladder 82 being pivotally supported so that it may form a gate for closing the opening 80 when desired such as when the pool is not in use. Also, various equipment normally

provided with a pool of this type may be employed such as a ladder 84 in the pool, various float ropes or the like may be attached and also filtration and similar equipment may be employed to retain the water in proper condition for swimming. As indicated, the structure of the pool is such that it may be supported on top of the ground surface with it only being necessary to substantially level the site or it may be partially or substantially completely recessed into an excavation so that the decking is substantially at ground level. The various structural components may be constructed of aluminum alloys or other noncorrosive material while the decking may be constructed of redwood or other suitable wood material or the like. The size characteristics of the pool may vary by varying the arcuate curvature of the segmental panels and the size of the offset portion of the swimming pool decking and related fence generally designated by the numeral 84 may be varied depending upon the requirements of each installation to provide sufficient space for chairs, tables, umbrellas and the like to facilitate sunbathing while maintaining privacy by the wire mesh fence 44 which also may be of conventional construction and will readily support canvas or other flexible material which may serve as a windbreaker if desired or provide additional privacy if desired.

In some installations, the flexible liner 14 may cover only the bottom and be sealed to the wall 12 at the lower edge portion or liner can be completely eliminated with the lower end of the wall embedded in concrete or similar bottom material with the wall being sealed in any suitable manner.

Also, various saddle structures may be employed for the inner edge of the decking in which the upper periphery of the liner may merely overlie the top edge of the peripheral wall or overlie the top edge of a grounded saddle provided therefor to enable adjustment of the liner as water fills the peripheral wall and liner to eliminate possible pulling out of the bead from the groove in the saddle support 64.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to.

I claim as my invention:

1. In a prefabricated swimming pool having a plastic inner liner: an outer peripheral wall formed from metallic sections having horizontally-extending corrugations therein, said sections being joined end-to-end to form a continuous self supporting wall in which said corrugations serve as continuous unbroken reinforcing bands extending around said swimming pool, there being an absence of sharp bends and corners in said continuous wall, said sections being formed from sheets of such thickness that said wall will retain water in the swimming pool substantially up to the top edge thereof without the need for external wall supports.
2. The swimming pool of claim 1 wherein said outer peripheral wall is circular in configuration.
3. The swimming pool of claim 1 wherein at least some of said metallic sections are arcuate in configuration.
4. The swimming pool of claim 1 wherein the ends of said metallic sections are overlapped and secured together by fasteners extending through holes formed in the overlapped ends.
5. The swimming pool of claim 1 wherein at least some of said sections are arcuate in configuration with the ends thereof overlapped and secured together by fasteners extending therethrough, decking means having an inner periphery associated with the top edge of the wall, said decking means including a plurality of radially disposed planks, an adapter interposed between the inner end of the planks and the upper edge of the wall and including a downwardly opening continuous groove conforming in shape and configuration to the upper edge of the wall for telescoping engagement therewith, means supporting the decking planks outwardly of the inner periphery including a plurality of support stringers extending

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circumferentially under the planks adjacent the outer ends thereof, a plurality of circumferentially spaced upstanding support posts, the lower end of each post being supported by a support plate generally in alignment with the lower edge of the wall, means interconnecting the support plate and the lower edge of the wall, and means on each support post engaging the stringers, said means on the post engaging the stringers including a pair of upstanding pegs rigid with the post, the ends of adjacent stringers having sockets therein opening downwardly for telescopically receiving the pegs.

6. A swimming pool construction comprising an upstanding peripheral wall, decking means having an inner periphery supported from the top edge of the wall, and means supporting the decking means outwardly of the inner periphery, said wall being constructed of sheet material having corrugations extending throughout the area thereof for reinforcing the wall, said wall forming the sole support for the inner periphery of the decking means and the sole means counteracting the outward forces exerted by water in the pool, said decking means including a plurality of radially disposed planks with each plank having the inner ends overlying the upper edge of the peripheral wall, an adapter interposed between the inner end of the planks and the upper edge of the wall and including a downwardly opening continuous groove conforming in shape and configuration to the upper edge of the corrugated wall for telescopic engagement therewith, said means supporting the

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decking means outwardly of the inner periphery including a plurality of support stringers extending circumferentially of the peripheral wall in radially spaced relation thereto and in underlying relation to the outer ends of the planks, a plurality of circumferentially spaced upstanding support posts, the lower end of each post being supported by a support plate generally in alignment with the lower edge of the wall, and means on an intermediate portion of each support post engaging the adjacent ends of a pair of circumferential stringers, said means including a pair of upstanding pegs rigid with the posts, the ends of adjacent stringers having sockets therein opening downwardly for telescopically receiving the pegs, the inner end of each supporting plate for the post including means connected with the lower edge of the wall whereby the wall retains the lower ends of the posts in spaced relation to the lower edge of the wall, each of said posts extending above the planks and a retaining barrier supported from the upper end portions of the posts above the decking, said peripheral wall being constructed of sheet metal with horizontally disposed corrugations continuous throughout the periphery thereof with the sheet metal being rigidified by the corrugations and of a gauge forming the sole support for the planks whereby the only vertical components between the lower edge of the pool and the decking planks includes only the supporting posts and the peripheral wall.

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