ABOVE GROUND SWIMMING POOL CONSTRUCTION

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ABSTRACT

An above ground swimming pool construction wherein the pool is hexagonal, the vertical walls are supported in channels and the decks are supported by arms, which are anchored to the channels; and the arms extend upwardly and outwardly, also extend above the deck to support deck rails, and the channels are cross-connected to opposite channels.

7 Claims, 7 Drawing Figures
ABOVE GROUND SWIMMING POOL CONSTRUCTION

BACKGROUND OF INVENTION

1. Field of Invention

This invention relates generally to above ground swimming pool constructions, and specifically to a frame which rigidly supports the decks, and a vinyl liner, and is resistant to torsional stress and deformation, which holds the contained water securely, without risk of collapse.

2. Prior Art

The appeal of the costly in-ground swimming pool has lead to the development of the above ground swimming pool which is much less costly. Unfortunately, such swimming pools, if they are to be priced reasonably, must be rather small. The increase in size of the above ground pool of round or rectangular construction requires the use of thicker, heavier, and stronger structural members, due to increased gullage so that the cost has increased so as to make such desirable larger pools beyond the reach of persons of modest means. If lighter, thinner, weaker structural members are used, they tend to deform under the weight of the contained water, and they soon collapse, with disastrous results from the release of the contained water.

SUMMARY OF INVENTION

It has been found that the weight of water in a hexagonal above ground swimming pool can be well controlled by the use of vertical braces for the walls, set in top and bottom channels, with support attached to the brace extending upwardly and outwardly to the deck level, and then upwardly above the deck to support a railing. Furthermore, horizontal deck supports, extending from the top channel to the braces, which are in turn united by a peripheral brace will impart great strength to the walls and high resistance to deformation. Bottom stringers between the opposite channels will provide additional resistance to deformation. Finally, arranging the walls hexagonally with four long side courses and opposite, end, shorter courses, will provide a pool of attractive size and width, without an extravagant volumetric increase such as might necessitate the use of heavy and costly braces.

DRAWINGS

These object and advantages as well as other objects and advantages may be attained by the construction shown by way of illustration in the drawings in which:

FIG. 1 is a perspective view of the swimming pool construction;
FIG. II is a partial cross-sectional view of the deck beam assembly;
FIG. III is a horizontal sectional view of the intersection of two sides of the swimming pool walls;
FIG. IV is a partial vertical sectional view of the swimming pool wall;
FIG. V is a partial top plan view of the deck at the intersection of two courses, with portions exploded away;
FIG. VI is a partial bottom view of the deck at the intersection of two courses; and
FIG. VII is a partial vertical sectional view of the deck assembly.

PREFERRED EMBODIMENT

Referring now to the drawings in detail, an outer, base frame 11 is provided which is hexagonal, with four sides 12, equal in length, and two equal ends 13, but shorter than the sides. The base frame 11 is formed of generally U-shaped base channels 14 having an inwardly extending leg 15. The frame 11, when resting on a flat surface is braced by the inwardly extending leg 15, and resists torsional forces. Transverse straps 16 are attached to each of the sides 12 at suitable intervals and extend across the base frame 11 to the opposite side 12 of the base frame 11 where the straps 16 are also attached. In this manner the hexagonal configuration of the base frame 11 is stabilized.

At suitable intervals, vertical I-beams 17 are set into the channels 14 and attached thereto. To secure together the upper ends of the beams 17, an inverted U-shaped channel 18 is provided. An L-shaped cap strip 19 is placed over the I-beams 17 and the inverted U-shaped channel 18 is placed over the cap strip 17. The inverted channel 18 is wider than the I-beam 17, providing on the outside, a space for the vertical leg of the cap strip 19, and on the inside, a space for the vertical wall panel to fit between the inverted channel 18 and the I-beam 17.

The wall panel is made of a plurality of horizontal, interlocking beams 21. These beams 21 have a slightly arculate face 22, and rearwardly extending legs at the top and bottom of the face 22. One leg 23 has a concave longitudinal groove, and the other leg 24, has a convex longitudinal rib. Thus when the beams 21 are stacked edgewise vertically, they will interlock by virtue of the interengagement of the convex and concave portions, to form a sturdy wall panel which, by virtue of water pressure on the arculate faces 22, will strongly interlock as the pressure tends to flatten the arculate faces 22.

The inverted U-shaped channel 18 has an inner edge L-shaped enlargement 25 whose vertical wall 26 is coplanar with the inner vertical wall of the channel 18. There is also an inner L-shaped enlargement 27 which is spaced inwardly from the outer wall of the U-shaped channel 18, thereby to form an inner socket for a deck.

An outer socket for the deck is provided by a generally U-shaped perimeter channel 20 disposed in opposition to the inner socket. Deck planks 28 fit into these sockets in edge abutment with each other. The perimeter channel 20 is supported by a brace 29. The brace 29 has a U-shaped seat 30 at its lower end which is attached to the vertical I-beam 17 by bolting or welding. The brace 29 extends upwardly and outwardly until it reaches the perimeter channel 20, where it then has a vertical portion 31 and is attached to the perimeter channel 29.

A railing is provided for the deck by a top rail 32 and a bottom rail 33 being attached to the vertical portion 31, with numerous vertical rails 33 interconnecting the top and bottom rails 32 and 33. The chosen hexagonal shape for the pool requires that the six sides be rigidly connected together at their outer deck intersections. This is accomplished by splice plates 34, which are bolted to the abutting deck sections at the point of intersection of the adjacent perimeter channels. The perimeter channels 20 have downwardly extending L-shaped legs 35, and an additional splice plate 36 connects the leg 35 to the adjacent leg 35.

Inner splice plates 37 are provided to be bolted to the abutting ends of the inverted U-shaped channels 18, to unite them together. Inner bottom splice plates 38 are bolted to abutting ends of the base channels 14.

To provide additional wall strength at the intersection of the base channels 14, and the inverted U-shaped channels where reinforcing vertical I-beams 17 cannot be inserted to strengthen these intersections, special corner posts, two part I-beams 38 are provided to fit into the top and bottom channels 14, 18. These special two part I-beams 38 have angularly disposed legs 39, angled to fit into the opposing channels 14, 18. They are bolted or welded to the channels 14, 18, and then the two parts of the beams 38 are bolted or welded together to provide a rigid corner. For additional strength, lock leg 40 may be provided on the legs 39 to fit into slots in the channels 11, 18 to impart even greater rigidity.

Deck planks 28 are shown sectioned in FIG. 2. They have a generally flat top surface with a central longitudinal channel 41 to provide for the run-off of water from the decks. At one longitudinal edge, the plank 28 is provided with a downwardly extending support leg 40. At the other lateral edge the plank 28 is also provided with a downwardly extending support leg 42. Each of these legs, 40 and 42 have inturned ends 45.
disposed in general parallelism with the top surface. One leg 40 has a longitudinal slot 43 and the other leg 42 has a longitudinal hook 44. In this manner, the planks 28 may be assembled with the longitudinal side edges interlocked with the longitudinal hook 44 of one locked into the longitudinal slot 43 of another. Since the perimeter channel 20 is not connected to the enlargement 27 which defines an inner socket for the deck by any cross-members, the interlocking planks 28 are attached, preferably by welding at each end to the enlargement 27 on the U-shaped channel 18 and also by welding to the perimeter channel 20, thereby locking them together. In addition, the individual planks 28 are attached to each other in abutting edge relationship, preferably by welding. In this manner, the inner and outer supports for the decks are rigidly secured together around the entire perimeter of the swimming pool, produces a top support for a swimming pool liner 46 which is exceedingly strong, rigid, and not subject to deformation. Likewise the base frame 11 connected thereto by the vertical I-beams 17 is also a rigid support for the horizontal interlocking beams 21 which define wall panels supporting the liner. Further rigidity and resistance to torsional forces is provided by the transverse straps 16 inter-connecting the sides 12.

The hexagonal shape of the above ground swimming pool construction provides a large swimming area wherein the weight of the water is readily supported in the vinyl liner without the generation of forces sufficient to deform the supporting structure.

I claim:

1. An above ground swimming pool construction comprising:
   a. a generally hexagonal base frame,
   b. an inwardly disposed leg on the frame,
   c. the frame having a generally U-shaped cross section,
   d. straps attached across the frame to opposite sides thereof,
   e. a plurality of vertical beams attached at their lower ends
to the base frame and extending upwardly therefrom,
   f. a generally hexagonal top channel over the top of the beams,
   g. a top channel having a generally U-shaped cross sec-
tion,
   h. a plurality of horizontal beams, in stacked array attached
to the vertical beams,
   i. a concave groove on one edge of each horizontal beam,
   j. a convex rib on the other edge of each horizontal beam,
   k. the concave grooves and convex ribs arranged in opposi-
tional engagement with each other,
   l. each of said beams having an arcuate inner face whereby
pressure thereon will tend to flatten the beam and urge
the convex ribs and concave grooves into tighter engage-
ment with each other.

2. The device according to claim 1, and:
   a. two part vertical corner beams at the intersections of
each of the hexagonal courses,
   b. the webs of the corner beams being attached together,
   c. the legs of the corner beams being angularly deflected to
correspond with the adjacent hexagonal courses.

3. The device according to claim 1 and:
   a. a generally L-shaped enlargement on the top of the top
channel to define with the top channel, an inner seat for
deck planks.

4. The device according to claim 3 and:
   a. braces extending upwardly and outwardly from the base
frame,
   b. a U-shaped seat on the bottom of the braces attached to
the vertical beams,
   c. a perimeter channel attached to the braces and lying in
the same horizontal plane as the inner slot for deck planks
and defining an outer seat for deck planks,
   d. a plurality of deck planks attached at either end to the
inner and outer seats.

5. The device according to claim 4 and:
   a. vertical extensions on the braces above the deck planks,
   b. a fence attached to the vertical extensions.

6. The device according to claim 2, and:
   a. lock legs on the legs of the corner beams fitted into slots
in the base channel.

7. The device according to claim 5, and:
   a. each deck plank provided with a longitudinal edge slot
and an opposite edge longitudinal hook,
   b. the slot of one deck plank interlocked with a hook of the
adjacent deck plank.

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