United States Patent [19]

Kessler et al.

[11] **3,736,599**

[45] **June 5, 1973**

[54] SWIMMING POOL CONSTRUCTION

[75] Inventors: **Frank L. Kessler,** Broomall; **Stephen F. Kendall,** Penn Valley, both of Pa.

[73] Assignee: **Ben Carson,** Bala Cynwyd, Pa.

[22] Filed: **Mar. 25, 1971**

[21] Appl. No.: **128,078**

[52] **U.S. Cl.** **4/172.19,** 52/169, 52/282, 52/285

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

[58] **Field of Search**.....4/172, 172.19; 52/588, 587, 227, 282, 285, 169, 269

[56] **References Cited**

UNITED STATES PATENTS

3,440,780	4/1969	Adam et al.	52/169
3,372,519	3/1968	Russell	52/587 X
3,574,870	4/1971	Orelind	4/172.19
3,381,430	5/1968	Wiczer	52/282
3,010,548	11/1961	Canalini	52/285 X
3,190,408	6/1965	Petterson	52/282 X
3,436,881	4/1969	Schlecht	52/282 X
3,416,165	12/1968	Pereira	4/172.19
3,579,665	5/1971	Barker	4/172.19

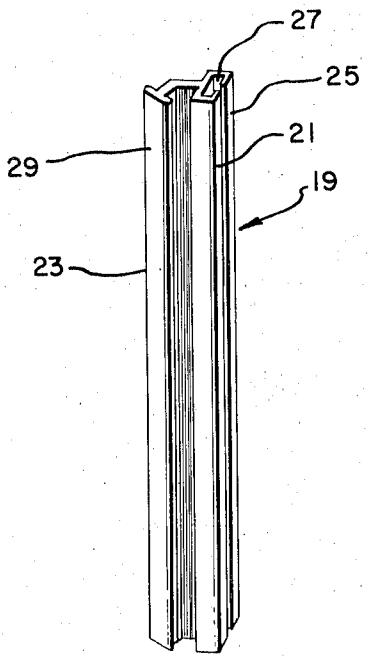
Primary Examiner—Henry K. Artis

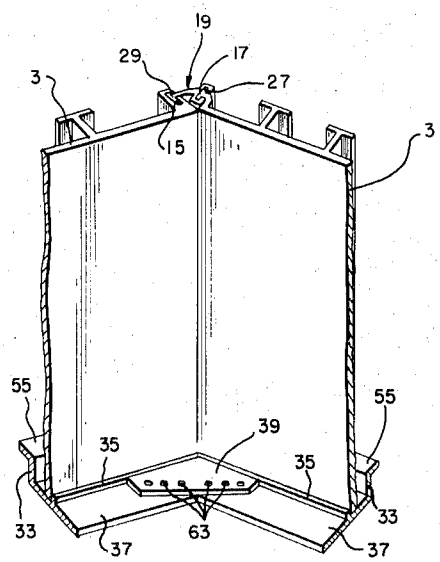
Attorney—Jay M. Cantor

[57] **ABSTRACT**

The disclosure relates to a swimming pool which is made of component parts which are prefabricated and assembled at the site of the installation. A plurality of side wall members are interlocked to form a shell, the shell receiving a flexible liner which holds the water within the pool.

3 Claims, 5 Drawing Figures



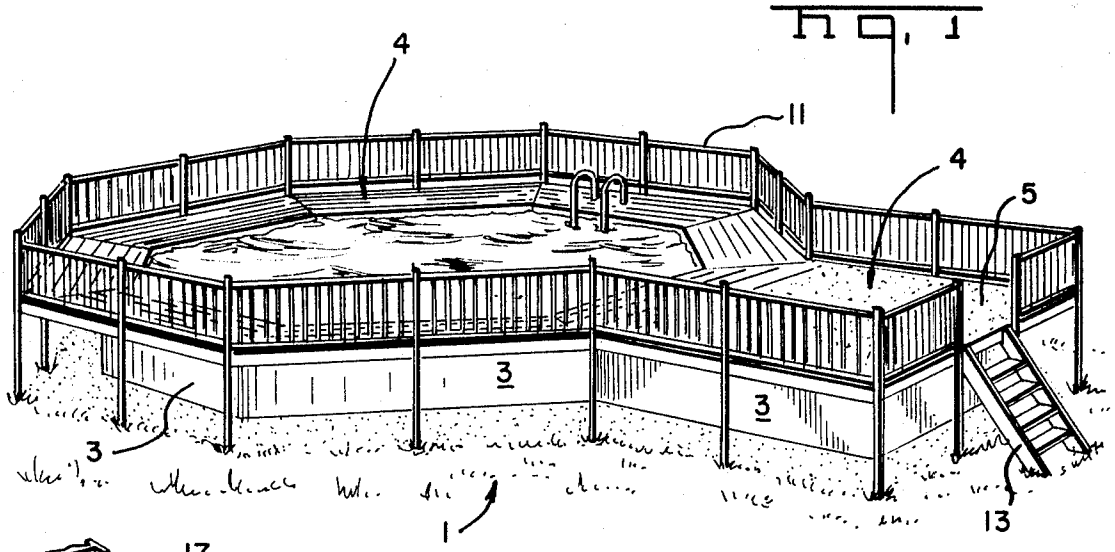


PATENTED JUN 5 1973

3,736,599

SHEET 1 OF 2

Fig. 1



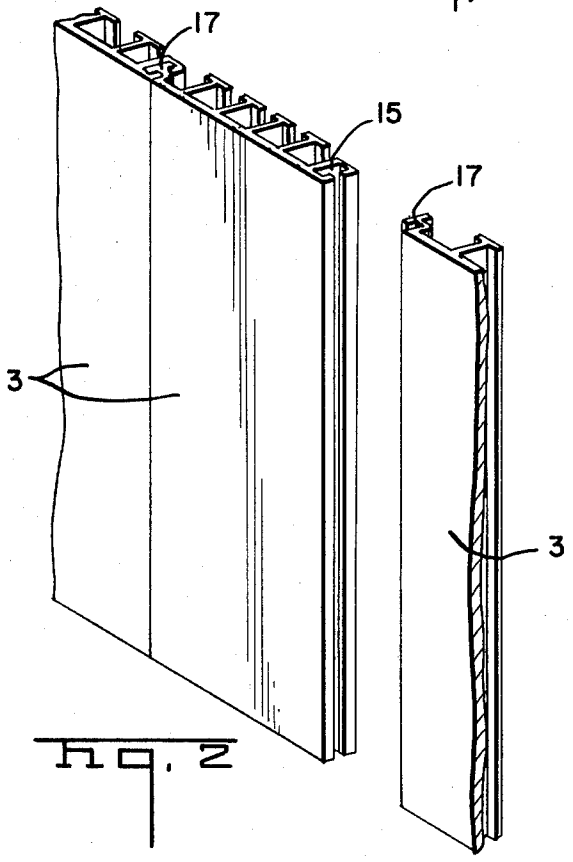


Fig. 2

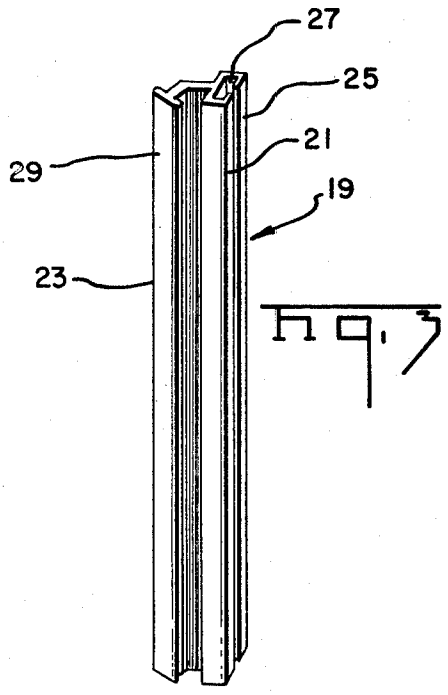


Fig. 3

Inventors

FRANK L. KESSLER

STEPHEN F. KENDALL

By: Jay M Cantor

Fig. 4

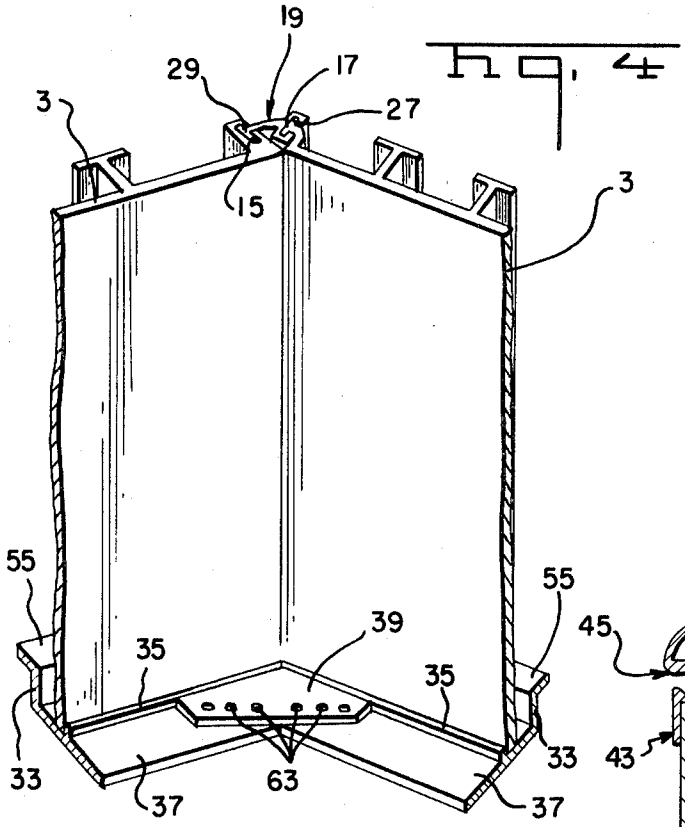
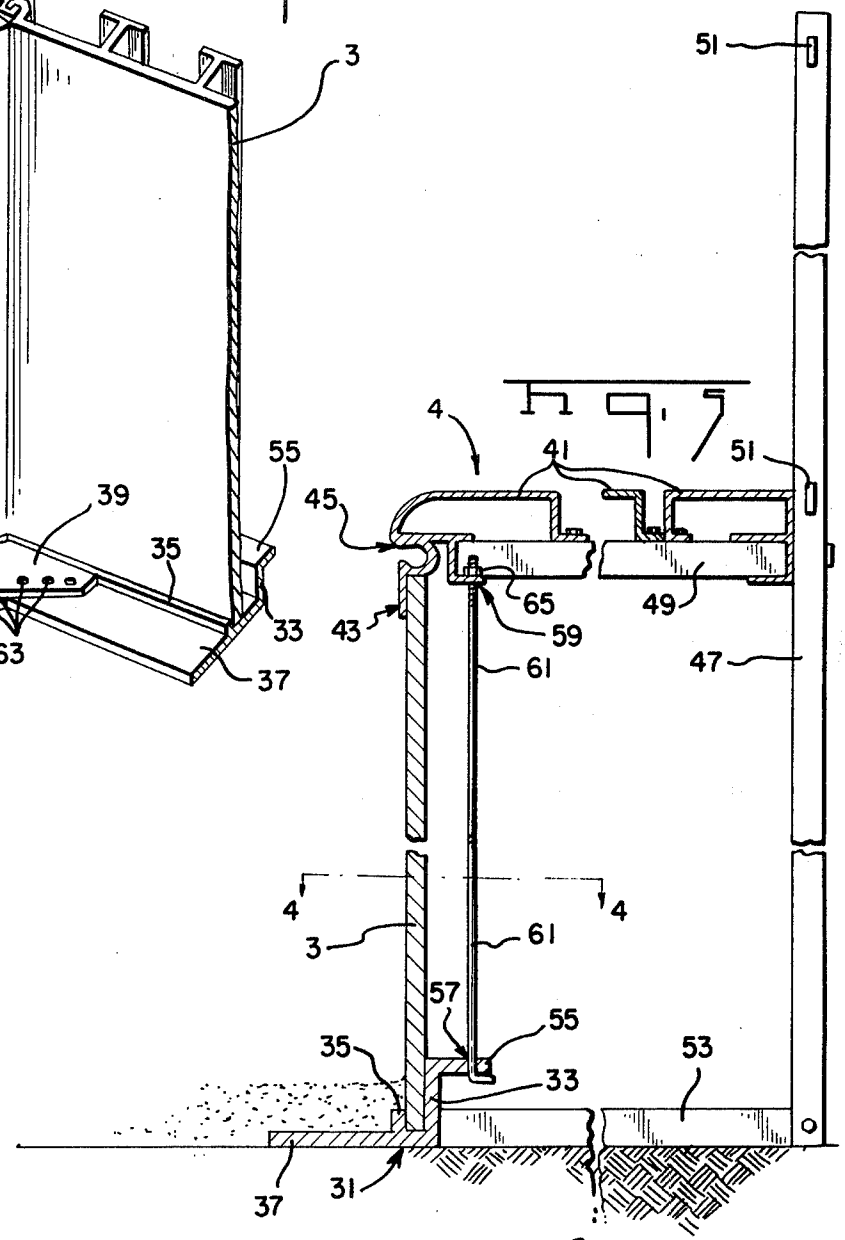


Fig. 7



Inventors
FRANK L. KESSLER
STEPHEN F. KENDALL

By:

SWIMMING POOL CONSTRUCTION

This invention relates to prefabricated swimming pools which are assembled at the installation site, and, more particularly, to a swimming pool having interlocking side wall members, each movable relative to the other members after installation, which can be easily and economically manufactured and which can be installed in a relatively short time at the installation site.

The swimming pools of the prior art were originally constructed by earth excavation with subsequent pouring of concrete to form the final pool. Such methods of pool construction were relatively expensive and the upkeep of concrete swimming pools was relatively high. Therefore, the art turned to relatively less expensive pool constructions, one such pool construction involving the use of prefabricated materials which could be assembled at the site of the installation, either in an excavation below ground or on the ground surface. Such swimming pools have normally been prefabricated from wood or metal materials such as aluminum extrusions or the like. Such pools contained the water therein by the use of flexible plastic liners and the like, pool depth being dependent merely upon the amount of earth excavation or pool height above ground level. Prefabricated pools of this type have found increasingly greater acceptance by the public due to their relatively lower cost than the prior art concrete pools. However, even these prior art extruded aluminum pools have not gained acceptance of the vast majority of home owners due to their relative cost. The art is therefore continually attempting to reduce the cost of prefabricated pools in order to increase the available market.

In accordance with the present invention, there is provided a swimming pool formed from extruded aluminum side walls and a flexible vinyl liner secured to the side walls for retaining the water therein. The side walls have a tongue and groove construction and are secured to each other by means of a corner element to which adjacent side walls are secured, the corner element also having a tongue on one side thereof and a groove on the other. The tongue member will have a smaller cross section than the groove to provide play therein whereby the size and shape of the wall elements need not be critical due to the play provided by the purposely poor fit between the tongues and the grooves. In this manner, the water is placed in the pool, pressure will be placed against the side walls and force the tongues against the grooves to provide the locking arrangement. In addition, the play which is provided during construction gives the installer the extra leeway required to produce the final polygonally shaped swimming pool. The swimming pool has the advantage that outward forces from the water applied thereto are normally applied at the center regions of each of the side wall members, this being the region of greatest strength of each wall member. In addition, as indicated above, the side wall members need not be extruded with extreme precision, thereby providing a great measure of economy both in the cost of materials as well as in the cost of installation, relative to prior art extruded aluminum swimming pools.

It is therefore an object of this invention to provide a prefabricated swimming pool having loosely fitting interlocking side wall members.

It is a further object of this invention to provide a prefabricated swimming pool having a wall attaching member for securing adjacent walls for providing additional play in adjacent side wall members.

It is a still further object of this invention to provide a prefabricated swimming pool which is relatively less expensive to install than prior art prefabricated swimming pools.

It is a still further object of this invention to provide a prefabricated swimming pool formed from elements which are relatively inexpensive to produce.

The above objects and still further objects of this invention will become apparent to those skilled in the art after consideration of the description of the following preferred embodiment thereof which is provided by way of example and not by way of limitation, with the accompanying drawings, wherein:

FIG. 1 is a perspective view of a swimming pool installation in accordance with the present invention;

FIG. 2 is a view in elevation of a typical side panel in accordance with the present invention;

FIG. 3 is an elevational view of a typical interconnecting linking member in accordance with the present invention;

FIG. 4 is a view of a typical arrangement of interlocking wall panels and connecting member in accordance with the present invention taken along the line 4—4 of FIG. 5; and

FIG. 5 is a cross sectional view of a typical swimming pool installation in accordance with the present invention.

Referring first to FIG. 1, there is shown a prefabricated swimming pool which is assembled at the site of the installation and labeled 1. In the embodiment of FIG. 1, there is shown an above ground pool, it being understood that an excavation can be made and the pool can be assembled therein to become a below ground pool. The pool includes side walls 3, a deck 4 having a carpeted area 5, a railing 11 and a stair 13 for entry onto the deck of the swimming pool. Within the side walls there is secured a vinyl liner or the like (not shown) which retains the water for the swimming pool.

Referring now to FIG. 2, there is shown a side wall member 3 in accordance with the present invention. Each side wall member 3 is formed from a single extruded aluminum member, each side wall having substantially flat top and bottom surfaces and having a groove portion 15 in one side wall thereof and a tongue portion 17 in the opposite side wall thereof. The groove 15 and the tongue 17 are of substantially identical shape, however the tongue 17 will be smaller in cross section to provide some play when fitting within a groove member 15 as will be explained in more detail hereinbelow. Also, a single flat side wall portion can be composed of one or plural side wall members 3 as shown in FIG. 2. The wall members 3 of adjacent wall portions are interconnected by means of an interlocking member 19 as shown in FIG. 3 which is of substantially triangular cross section, through this shape is not essential. The front edge 21 of the interlocking member 19 is bounded by side walls 23 and 25, the angle between the sides 23 and 25 being approximately 360° divided by the number of side wall elements (i.e., 45 degrees for an eight-sided swimming pool). The side wall 25 will have a groove 27 therein which will be identical to the groove 15 as shown in FIG. 2. The side wall 23 will have a tongue member 29 therein which will be substantially identical to the tongue member 17 of FIG. 2.

Side wall members 3 are interconnected by means of the interlocking member 19 by sliding an interlocking member 19 over the full length of the tongue of one wall member 3 and within the full length of the groove of an adjacent wall member 3 as shown in FIG. 4. This arrangement is continued around the full length of the pool until all of the walls are interconnected as will be explained in more detail hereinbelow.

The swimming pool, in accordance with the present invention, is installed as shown in FIG. 5, by first interconnecting a plurality of bottom rail members 31 having an outer flange 33 and an inner flange 35 therein. The rails 31 can be formed from extruded aluminum or the like. The distance between the outer flange 33 and the inner flange 35 will be greater than the width of a side wall 3. Adjacent rail members 31 are interconnected by positioning two rail members adjacent each other so that the outwardly extending portion 37 of each rail member 31 abuts the outwardly extending portion 37 of the next rail member 31 (FIG. 4), the rail members forming an angle with each other equal to 360° divided by the number of sides of the pool. Each outwardly extending portion 37 has apertures therein for receiving bolts 63 which are passed therethrough and through a supporting member 39 as clearly shown in FIG. 4. Rail members 31 are positioned and secured to each other in the manner above described to form an N-sided polygon, as desired.

After the rail members 31 are secured to one another and positioned at the pool site, side wall members 3 are interconnected with one another by means of the interlocking member 19 as above described, the side wall members and the interlocking member being positioned in the groove formed between the outer flange 33 and the inner flange 35. As stated above, the distance between the flanges 33 and 35 is greater than the width of the side wall 3 or the interlocking member 19. It should at this point be noted that the interlocking member 19 may be omitted, however less play in the side walls is then provided and this could make installation more difficult. The side walls 3 and interlocking member 19 are then secured one within the other and within the groove between the flanges 33 and 35 until the entire side wall complement of the pool is completed.

At this point, coping 41 having grooves 43 formed therein are positioned so that the top portion of the wall 3 fits within the groove 43 as shown in FIG. 5. Each coping 41 has a liner receiving groove 45 extending outwardly of the pool and positioned above the groove 43 for receiving a vinyl liner as is well known in the art. A railing column 47 is secured at the opposite side of the coping to a frame 49 on which the coping is positioned and secured. The column 47 extends upwardly beyond the coping to provide a railing column and includes railing tabs 51 thereon for receiving a railing of the type described in U.S. Pat. No. 3,481,584 of Kessler et. al. The column 47 also provides the function of supporting the deck 4 which is composed of the frame 49 and coping 41 as described above. It can be seen that the railing column rests on the earth and is secured by means of a rail 53 securing the bottom of the column 47 to the rail 31.

The bottom 31 further includes a flange 55 extending outwardly of the pool center and having apertures 57 therein at spaced points. Also, the frame 49 has apertures 59 therein immediately above the apertures 57. A gripping rod 61 is positioned through the apertures 57 and 59, the gripping rod 61 being secured above the aperture 59 and below the aperture 57. This can be provided by utilizing a rod which is threaded at one or both ends and securing a washer and bolt 65 to one or both ends. By tightening of the bolt or bolts 65 secured to the rod 61, the frame 49 and bottom rail 31 will be placed in compression against the side wall 3 to lock these elements into the configuration shown in FIG. 5.

It can be seen that the prefabricated swimming pool in accordance with the above described embodiment is easily installed at the pool site, requiring essentially little skill and requiring relatively little installation time. It can also be seen that the swimming pool components require relatively little precision and can be produced relatively inexpensively.

Though the invention has been described in respect to a specific preferred embodiment thereof, many variations and modifications thereof will immediately become apparent to those skilled in the art. It is therefore the intention that the appended claims be interpreted as broadly as possible in view of the prior art to include all such variations and modifications.

What is claimed is:

1. A swimming pool construction comprised of modular sections including:
- a plurality of panels forming the encompassing wall of the pool,
- an upper and a lower rail for interfitting with the top and bottom edges of the panels respectively, for maintaining them in upright position,
- each panel terminating at one side edge in an elongated bar which is T-shaped in cross-section,
- the opposite side edge of each panel terminating in an enclosed hollow tubular member having a longitudinal slit in its wall to interlock with said bar in the one side edge of an adjacent panel in a common plane with the next adjacent panel,
- and means for maintaining adjacent panels interlocked at a predetermined angle to each other less than 180° comprising,
- an elongated angular member, the angle of which is the same as said predetermined angle,
- the angular member terminating at one free side edge with a tubular member similar to said tubular member of a panel for interlocking with the bar of a panel,
- the angular member terminating at its other free side edge with an elongated bar which is T-shaped in cross-section for fitting within an interlocking with the tubular element of a panel.

2. The swimming pool construction of claim 1 wherein the leg of the bar provided on a panel is parallel to the wall and offset therefrom by a flange protruding transversely from said one edge of a panel,
- the tubular member being substantially rectangular with one wall protruding transversely from the other side edge of the panel, the slit being in said one wall,
- whereby when the bar is interlocked within the tubular member the adjacent edges of the panels abut.

3. The swimming pool construction of claim 2 wherein a plurality of columns spaced laterally from each other about the assembled panels of the pool, rigid frame means securing the columns to the top and lower rails, the columns extending upwardly beyond the top rail and provided with securing means at its sides for railings therebetween.

* * * * *