Jan. 15, 1963 R. C. HEGERFELD 3,072,921

CONSTRUCTION METHODS FOR SWIMMING POOLS

Filed Aug. 10, 1960 3 Sheets-Sheet 1

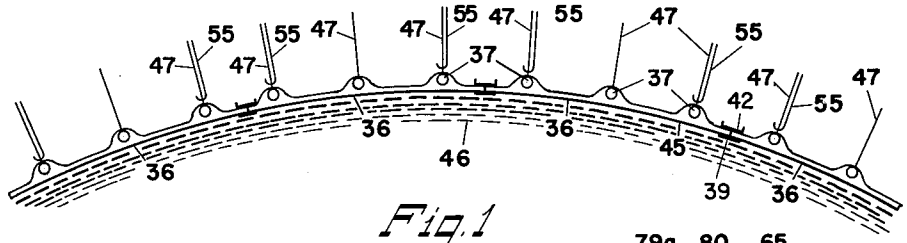


Fig. 1

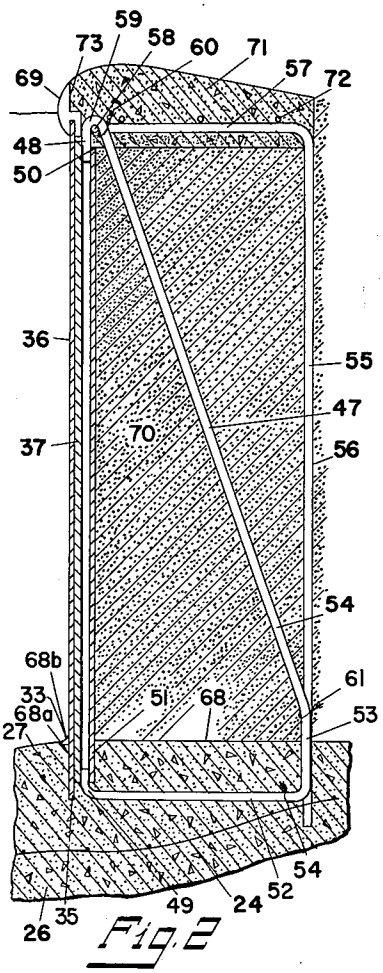


Fig. 2

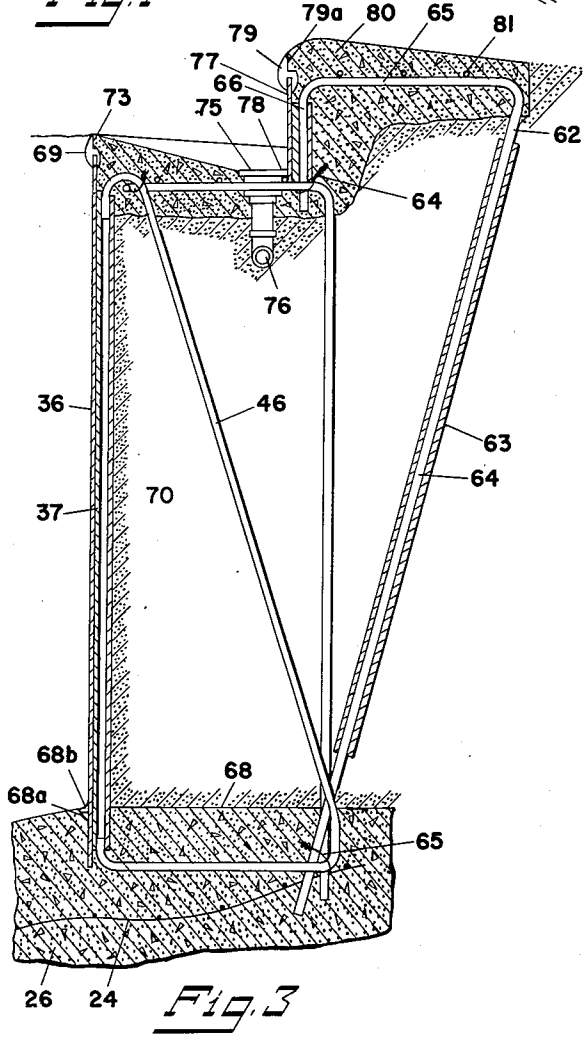


Fig. 3

INVENTOR
RICHARD C. HEGERFELD

BY Joseph G. Werner

ATTORNEY

Jan. 15, 1963 R. C. HEGERFELD 3,072,921

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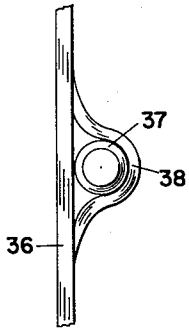


Fig. 4

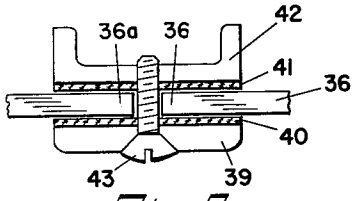


Fig. 5

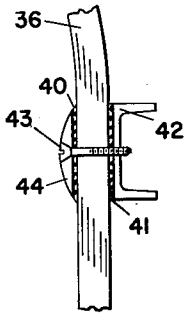


Fig. 6

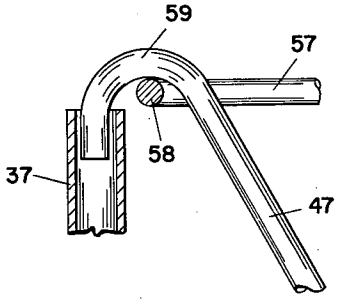


Fig. 7

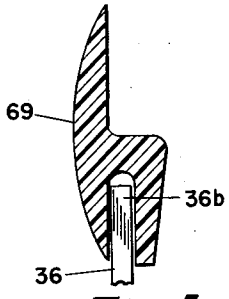


Fig. 8

INVENTOR
RICHARD C. HEGERFELD

BY Joseph G. Werner
ATTORNEY

Jan. 15, 1963 R. C. HEGERFELD 3,072,921

CONSTRUCTION METHODS FOR SWIMMING POOLS

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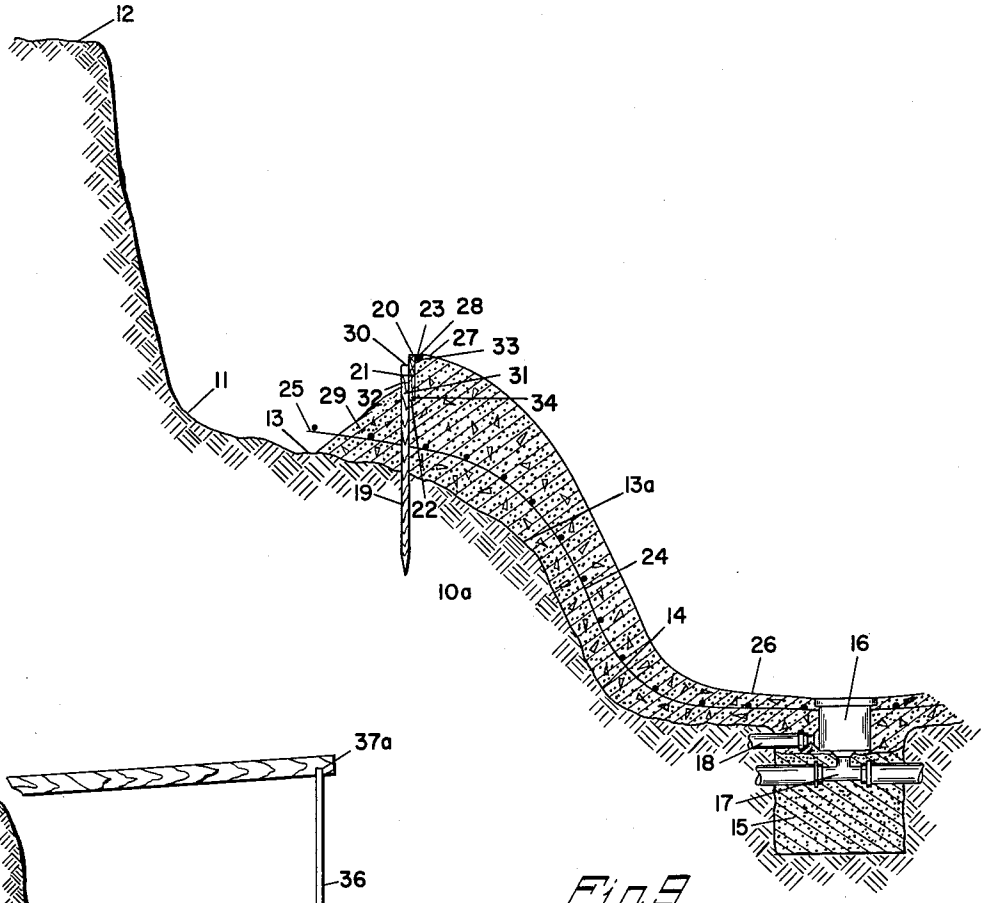


Fig. 9

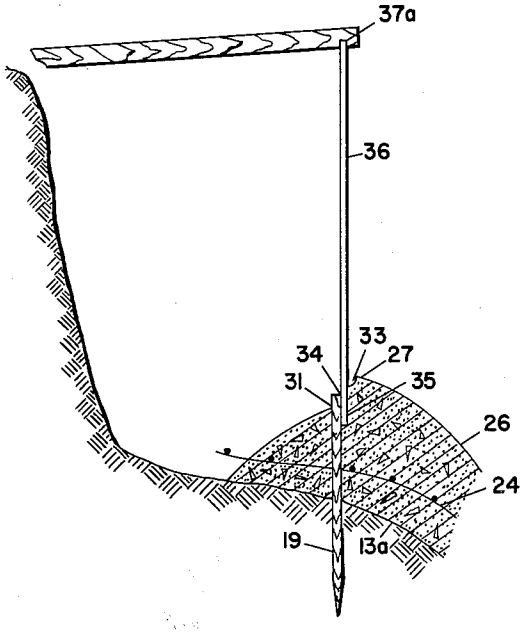


Fig. 10

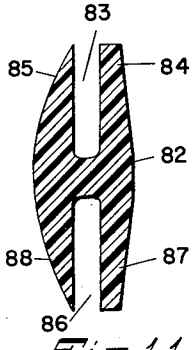


Fig. 11

INVENTOR
RICHARD C. HEGERFELD

BY Joseph G. Werner
ATTORNEY

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3,072,921 CONSTRUCTION METHODS FOR SWIMMING POOLS

Richard C. Hegerfeld, Sauk City, Wis.

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5 Claims. (Cl. 4—172)

This invention relates to swimming pools and methods of constructing such pools, and particularly to swimming pools having sidewalls of fiber glass or like material.

It is an object of this invention to provide a construction and construction methods for swimming pools wherein the sidewalls are comprised of reinforced fiber glass panels or like material.

It is another object of the invention to provide a construction for swimming pools wherein the fiber glass sidewall panels are securely anchored by supports seated in concrete and the dirt fill on the outer side of the panel.

A further object of the invention is to provide a construction for swimming pools wherein the fiber glass sidewalls provide great flexibility for various sizes and shapes of swimming pools, and to further provide for simple repair or replacement of sidewalls in the event of damage thereto.

An additional object of my invention is to provide swimming pools which are relatively inexpensive and which can be easily installed.

Another object of my invention is to provide a construction for swimming pools which readily comply with sanitary and safety requirements of various local and other building codes.

Other objects and advantages of the invention will be obvious from the following detailed description of one embodiment thereof, and the accompanying drawings, wherein:

FIG. 1 is a fragmentary top view of the swimming pool sidewalls showing the support members and means for securing the fiber glass panels together.

FIG. 2 is a side view partially in section of the panel with concrete base and coping and support members.

FIG. 3 is a side sectional view partially in section of the panel with concrete base and coping and support members and drain when a scum gutter is provided.

FIG. 4 is a fragmentary top view of a fiber glass panel showing the pipe support member secured thereto.

FIG. 5 is a top view of a preferred method of securing the fiber glass panels together.

FIG. 6 is a top view of a modified method of securing the fiber glass panels together.

FIG. 7 is an enlarged fragmentary side view, partially in section showing the connection of support members at the upper portion of the panel.

FIG. 8 is a sectional side view of coping molding for the sidewall panels.

FIG. 9 is a fragmentary side view of the soil excavation of the pool showing the concrete forming preparatory to placement of the fiber glass side panels.

FIG. 10 is a fragmentary side view of the erection of the fiber glass panel.

FIG. 11 is an end view of a modified molding material for securing the fiber glass panels together.

The swimming pool may be of any desired shape, such as rectangular, round, oval, kidney-shaped and so forth, because of the flexibility of the fiber glass sheets forming the wall of the pool. After the shape and size of the pool is determined, the soil **10***a* may be excavated. Near the edge **11** of the entire perimeter of the pool the excavation is preferably a depth of about three feet from the surface **12** of the soil and extends as a gradually sloping ledge **13** for about two feet to a point **13***a* which has a depth of approximately 3½ feet from the surface **12** of soil

10*a*. The exacavation **14** of the soil may then be deepened as desired toward the center of the pool, with recess **15** containing crushed rock, at the lowest depth for the main drain **16** and hydrostatic relief valve **17**, with drain pipe **18**.

Stakes **19** are then driven in the sloped area **13** as shown in FIG. 9 around the perimeter of the pool excavation at a distance of about one foot apart. A continuous form **20**, preferably of plywood about 3¾ inches in width and ¼ inch thick (i.e., the thickness of the fiber glass) is fastened to the upper ends of stakes **19** by nails **21** and extends around the perimeter of the pool. The lower edge **22** of form **20** is to be on an even horizontal plane. Base shoe mold **23** having a "quarter round" shape is nailed or otherwise secured to the top of form **20** as shown in FIG. 9. After hooking up the drain pipe **18**, reinforcement bars or wire mesh **24** are laid along the bottom of the excavation, the upper end **25** extending outside the periphery of form **20**.

The concrete floor **26** of the pool is then laid. It is important that the upper edge **27** of the concrete be approximately level with the top edge **28** of base shoe mold **23**. A quantity of concrete **29** from this first pouring should also be placed behind stake **19** as indicated in FIG. 9.

After the concrete of such first pouring has been allowed to set, the top **30** of the stakes **19** which are nailed to form **20** are cut off at **32** from the portion **31** of the stakes **19**. The form **20** with the base shoe mold **23** is then carefully removed, leaving an indent **33** at the upper edge **27** of the concrete and a slot **34** between the concrete **26** and the remaining portion **31** of stake **19**.

The lower portion **35** of fiber glass panels **36** are then set into the slots **34** between concrete **26** and portion **31** of stake **19**. The panels must be level and carefully plumbed. It may be held in position by notched strips **37***a* which may be driven into the soil bank. The fiber glass panels are set side by side around the perimeter of the excavation, preferably about ½ inch apart.

The panels **36** are spliced together by a splice assembly consisting of a facing strip **39** of aluminum, chrome or other suitable materials that will not readily oxidize or deteriorate, an inner gasket **40** and an outer gasket **41** of neoprene or similar material, a backing plate **42** which may be a channel iron for additional strength as shown in FIG. 5. Facing strip **39** is secured to backing plate **42** by inset screws **43** at various intervals. When screws **43** are tightened, a water-tight seal is created at the joints of the side edges **36***a* of fiber glass panels **36**.

A modified splice assembly is shown in FIG. 6 wherein facing strip **44** has a greater curvature or more oval shape than facing strip **39**. A further modified means of splicing the fiber glass is illustrated in FIG. 11, wherein as hereinafter described, a double-notched molding **82** is used.

The final or last fiber glass panel to be fitted into the pool sidewall **35** may be cut with a saw to fit the remaining opening in the wall, thereby enclosing the pool area **46**.

Fiber glass panel **36** has vertical pipe support members **37**, preferably three on each panel, which are secured by a U-shaped fiber glass strip **38** which is fused or otherwise secured to fiber glass panel **36**.

Each of the support members **37** is equipped with a reinforcing bar **47**, preferably of steel, having curved upper and lower end portions **48** and **49**, respectively, which hook into the respective upper and lower ends **50** and **51** of pipe support members **37**. The base portion **52** of reinforcing bar **47** extends horizontally back from pipe support member, turning upward to form a vertical portion **53** and then extending diagonally at **54** to upper end **50** of reinforcing bar **47**. Base portion **52** is anchored to wire mesh **24** by wire **54**.

In order to furnish additional support, a strengthening reinforcing bar **55** is used having a long vertical side **56**, a short horizontal side **57** and a short projecting end **58** at right angles, and on the same horizontal plane as side **57**. Short projecting end **58** extends under the curvature **59** of reinforcing bar **47**, and is wired to the latter by wire **60**. The vertical side of strengthening bar **55** is likewise wired to reinforcing bar **47** by wire **61**. Preferably strengthening bars **55** are so used with the support members **37** located nearest the outer edges of glass fiber panels **36**, as shown in FIG. 1.

Where as scum gutter is desired, or is required by local ordinance, a scum gutter reinforcing bar **62**, which may be partially enclosed in pipe sleeve **63**, is secured to strengthening bar **55** by wires **64** and **65**. The scum gutter reinforcing bar **62** has a long diagonally extending side **64**, a horizontal side **65** and a relatively short vertical side **66**. Side **66** may be partially enclosed in a collar **67**.

After the reinforcing bars **47** and strengthening bars **55**, and where desired, scum gutter reinforcing bars **62** have been positioned as shown in FIGS. 2 and 3, concrete is poured behind a portion of the glass fiber panels **36** to cover portion **31** of stakes **19**, the lower portion **35** of the fiber glass panel, the lower portions of reinforcing bars **47**, strengthening bars **55** and scum gutter reinforcing bars **62**, and extending above the lower end **51** of pipe support members **37**, to the approximate concrete level **68** as shown in FIGS. 2 and 3.

Indent **33** is filled with a grout of water and cement **68***a* to within about ½ inch from the top. Thereafter the upper portion of indent **33** is filled with a rubber water seal **68***b* to provide a good water seal.

After concrete **68** has set, the supporting strips **37***a* may be removed and coping molding **69**, which may be plastic, aluminum or other suitable material, is applied around the top **36***b* of the fiber glass panels **36**. The area **70** behind fiber glass panels **36** is then filled with sand and gravel **70** and compacted. Concrete coping **71** with reinforcement wires **72** is laid on top of the fill **70** against the back face **73** of coping molding **69**, to cover the top portions of reinforcing bars **47** and strengthening bars **55**, as shown in FIG. 2.

Where scum gutter is provided, as illustrated in FIG. 3, the scum gutter concrete coping **74** is sloped downward from the back face **73** of coping molding **69** toward drains **75** which has outlet **76** to filter (not shown). A strip **77** of fiber glass is located between collar **67** and the inlet **78** of drains **75** and sealed in place by the concrete coping **74** behind and between drain inlets **78**. After the concrete coping **74** has set the scum gutter coping molding **79**, which is similar to coping molding **69**, is applied to the top of fiber glass strips **77**. Outer coping **80** having reinforcement wires **81** is then laid against the back face **79***a* of molding **79** to cover the upper portions of the scum gutter reinforcing bar **62** and collar **67** as shown in FIG. 3.

FIG. 11 shows the end view of a modified molding **82** with a groove **83** between extending edges **84** and **85**, and groove **86** between extending edges **87** and **88**. The respective side edges **36***a* of the fiber glass panels **36** are extended into grooves **83** and **86**. Molding **82** is composed of plastic, fiber composition or similar material that will provide a water tight seal between the fiber glass panels **36** and molding **82** extends the length of the panels.

It is to be understood that the present invention is not confined to the particular construction, arrangement of parts or methods herein illustrated, but embraces all such modifications and alterations thereof, as may come within the scope of the following claims:

I claim:

1. A method for constructing an outdoor swimming pool having sides composed of individual panels comprising, excavating the earth for the swimming pool area, providing a sloping ledge around the perimeter of the pool area, constructing a concrete form over said ledge for said panels, laying concrete for the floor of the pool and on the forward, rearward and bottom sides of said form, removing the concrete form and placing the lower portion of the panels in the slot provided by the concrete form, joining the individual panels in substantial vertical alignment, securing reinforcing bars to the rear of the panels, laying concrete behind the lower portion of said panels to cover the lower and base portions of the reinforcing bars, compacting fill material behind the panels, attaching coping molding to the upper portion of said panels, providing a coping behind said coping molding.

2. A method for constructing an outdoor swimming pool having sides composed of individual panels comprising, excavating the earth for the swimming pool area, providing a sloping ledge around the perimeter of the pool area, constructing a concrete form over said ledge for the lower portion of said panels, laying concrete for the floor of the pool and on the forward, rearward and bottom sides of said form, removing the concrete form and placing the lower portion of the panels in the slot provided by the concrete form, joining the individual panels in substantial vertical alignment, securing reinforcing bars which extend the approximate length of said panels to the rear of the panels, laying concrete behind the lower portion of said panels to cover the lower and base portions of the panels and reinforcing bars, compacting fill material over said concrete behind the panels, attaching coping molding to the upper portion of said panels, laying concrete coping behind said coping molding, said concrete coping to incorporate the upper portions of the reinforcing bars, sealing the junction of the lower portion of said panels and the floor of the pool.

3. A method for constructing an outdoor swimming pool having sides composed of individual panels comprising, excavating the earth for the swimming pool area, providing a sloping ledge around the perimeter of the pool area, constructing a concrete form over said ledge for said panels, laying concrete for the floor of the pool and on the forward, rearward and bottom sides of said form, removing the concrete form and placing the lower portion of the panels in the slot provided by the concrete form, joining the individual panels in substantial vertical alignment, securing reinforcing bars to the rear of the panels, securing scum gutter reinforcing bars to said other reinforcing bars, laying concrete behind the lower portion of said panels to cover the lower and base portions of the reinforcing bars and scum gutter reinforcing bars, compacting fill material behind the panels, attaching coping molding to the upper portion of said panels, providing a coping behind said coping molding, and providing a scum gutter by placing a raised outer coping behind said coping.

4. A method for constructing an outdoor swimming pool having sides composed of individual panels comprising, excavating the earth for the swimming pool area, providing a sloping ledge around the perimeter of the pool area, constructing a pool drain at the deepest part of the excavated pool area, constructing a concrete form over said ledge for said panels, laying concrete for the floor of the pool and on the forward, rearward and bottom sides of said form, removing the concrete form and placing the lower portion of the panels in the slot provided by the concrete form, holding the panels in position with notched strips driven into the soil bank behind the panels, joining the individual panels in substantial vertical alignment, securing reinforcing bars to the rear of the panels, securing strengthening reinforcement bars to said other reinforcement bars, laying concrete behind the lower portion of said panels to cover the lower and base portions of the reinforcing bars, compacting fill material behind the panels, attaching coping molding to the upper portion of said panels, providing a coping behind said coping molding.

5. A method for constructing an outdoor swimming

pool having sides composed of individual panels comprising, excavating the earth for the swimming pool area, providing a sloping ledge around the perimeter of the pool area, constructing a concrete form over said ledge for said panels, laying concrete for the floor of the pool and on the forward, rearward and bottom sides of said form, removing the concrete form and placing the lower portion of the panels in the slot provided by the concrete form, joining the individual panels in substantial vertical alignment, securing reinforcing bars to the rear of the panels, securing scum gutter reinforcing bars to said other reinforcing bars, laying concrete behind the lower portion of said panels to cover the lower and base portions of the reinforcing bars and scum gutter reinforcing bars, compacting fill material behind the panels, attaching coping molding to the upper portion of said panels, providing a coping behind said coping molding, constructing a plurality of drains along the rear edge of the coping, providing a scum gutter by placing substantially vertical strips in edge to edge abutment along the rear edge of the coping, attaching scum gutter coping molding to the upper portions of said strips, providing an outer coping behind said scum gutter coping molding.

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