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Arp

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[54] **SWIMMING POOL WALL**

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Related U.S. Patent Documents

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[52] **U.S. Cl.** **52/169.7**; 4/172.19; 52/602

[58] **Field of Search** 52/169.7, 602; 4/172.19

[56] **References Cited**

U.S. PATENT DOCUMENTS

427,648	5/1890	Webb	52/593
1,589,938	6/1926	Burney	52/602
3,064,273	11/1962	Kwake	4/172.19
3,271,787	9/1966	Clary	4/172.19
3,410,044	11/1968	Moog	52/439

FOREIGN PATENT DOCUMENTS

129442	7/1919	United Kingdom	52/602

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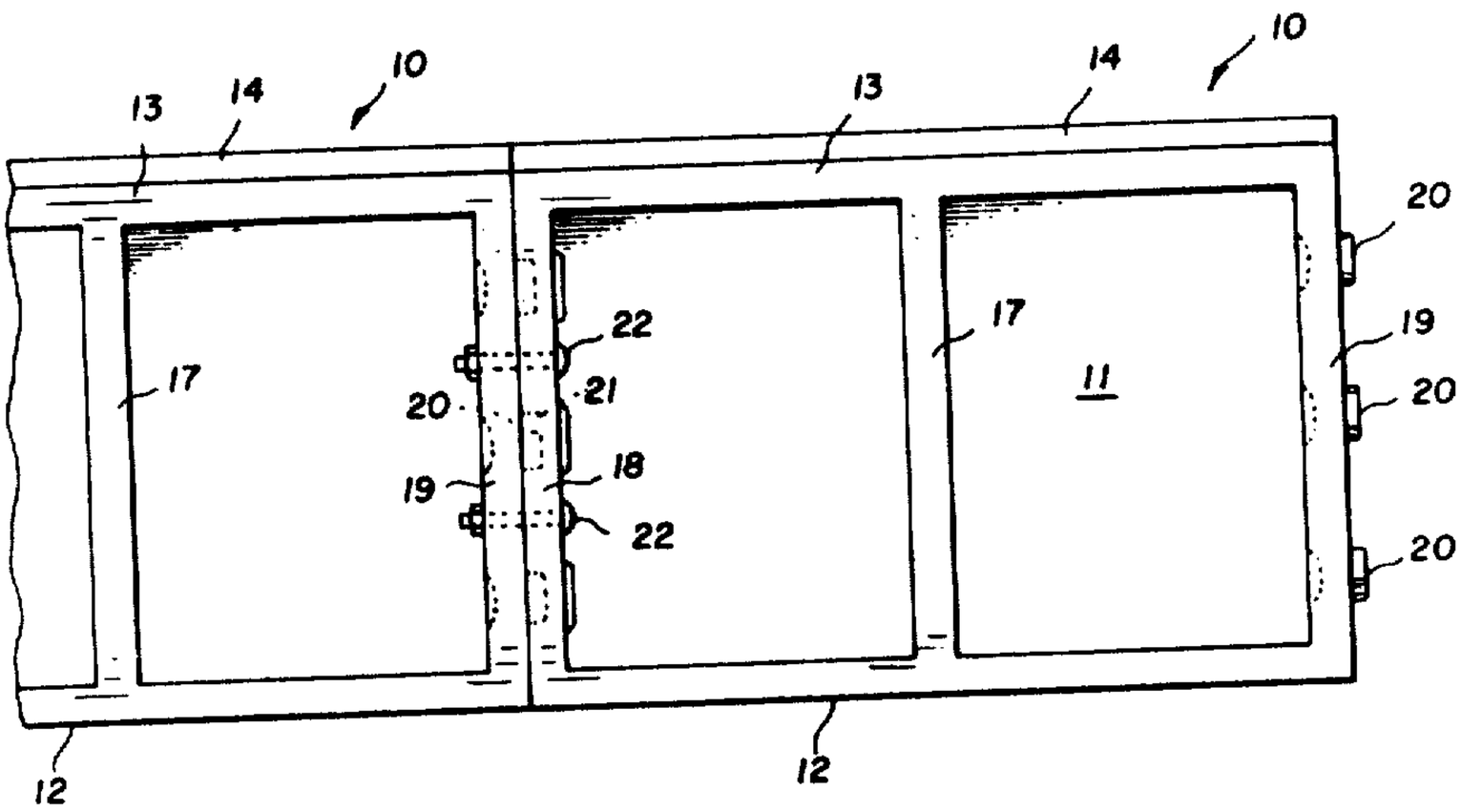
[57] **ABSTRACT**

A swimming pool wall is formed of uniform sections of molded structural foam secured together, and the sections include: a front facing wall; a base integral with the bottom edge of the facing wall; a coping wall integral with the top edge of the facing wall; end walls integral with the facing wall, the base, and the coping wall; the end walls having projections and recesses fitting together for alignment of the sections; and a rib integral with the base, the coping wall, and the back of the facing wall.

7 Claims, 3 Drawing Figures



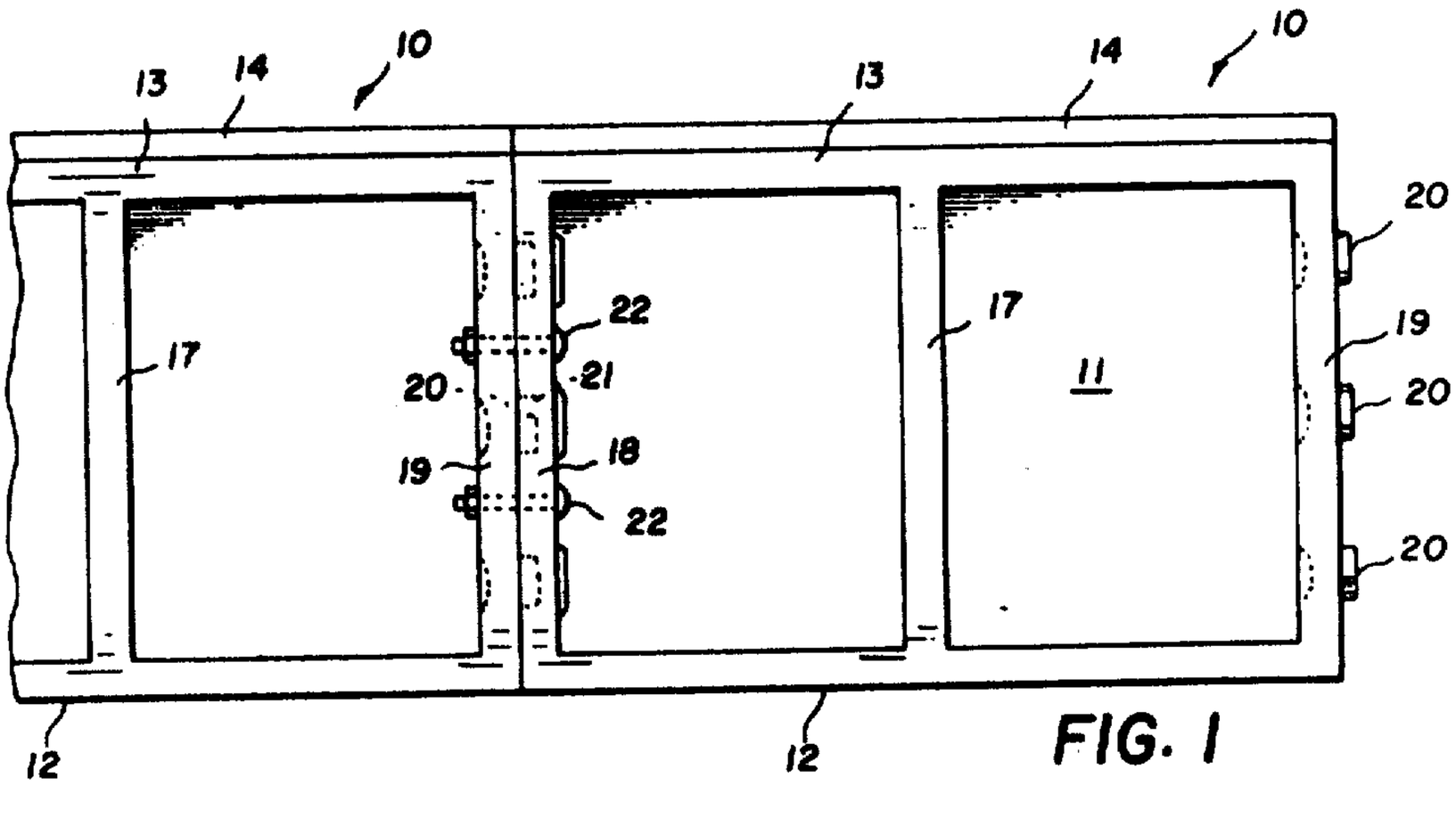


FIG. 1

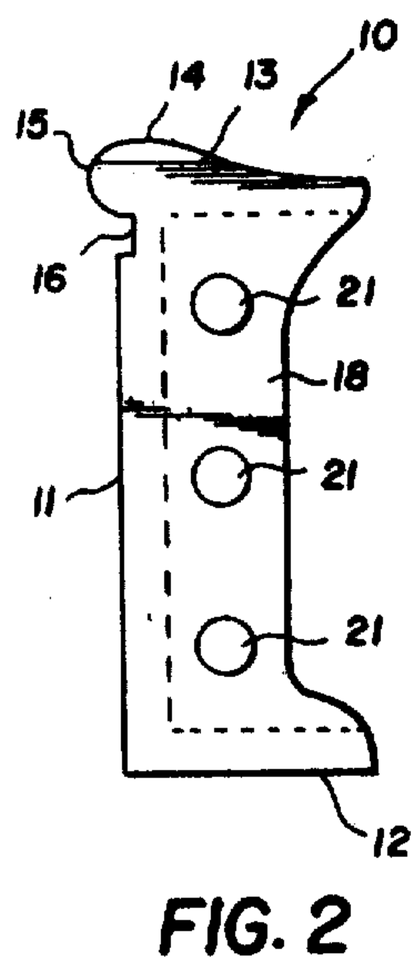


FIG. 2

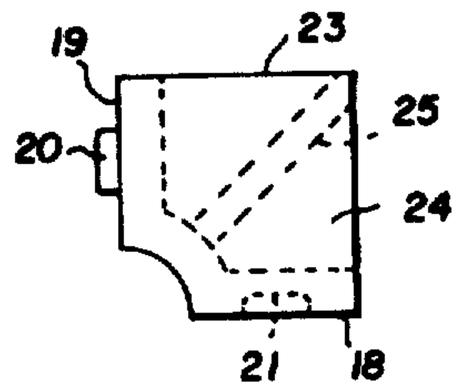


FIG. 3

SWIMMING POOL WALL

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

THE INVENTIVE IMPROVEMENT

Previously, the walls of in-the-ground swimming pools have been constructed at the site in an expensive and laborious process. Many parts were fitted and fastened together and a separate coping was installed along the top of the pool wall.

The invention involves the discovery that pool walls can be made of uniform sections of molded structural foam if each section is shaped in a specified way. Such structural foam sections can be handled manually at the site and can be quickly set in place and secured together to form a pool wall substantially less expensive than previous pool walls. Also, such molded structural foam sections preferably include an integral coping wall along the top so that no separate coping parts are needed.

In addition to the advantages of easy assembly and installation, structural foam can be made rot-proof, mildew-proof, rust-proof, and capable of long life in the ground. This means that pool walls built according to the invention are not only less expensive but also last longer and give more satisfactory service.

SUMMARY OF THE INVENTION

The inventive swimming pool wall is formed of a plurality of uniform sections of molded structural foam secured together with each of the sections having: a vertical flat facing wall continuous for the length of the section; a base formed integrally with the bottom of the facing wall and extending perpendicularly and outwardly from the back of the facing wall; a coping wall formed integrally with the top of the facing wall and extending outwardly from the back of the facing wall; end walls formed integrally with the facing wall, the base, and the coping wall and the mutually abutting surfaces of the end walls of adjacent sections having aligned projections and recesses for alignment of adjacent sections; and ribs formed integrally with the base, the coping wall, and the back of the facing wall to extend between the coping wall and the base.

DRAWINGS

FIG. **1** is a rear elevation of a pool wall section according to the invention showing a fragment of an adjacent pool wall section connected thereto;

FIG. **2** is an end-elevation of the pool wall section of FIG. **1**; and

FIG. **3** is a plan view of a corner piece for connecting the inventive pool wall sections.

DETAILED DESCRIPTION

The inventive pool wall sections **10** illustrated in the drawings are molded of structural foam material and secured together to form the walls of in-the-ground swimming pools. Structural foam is formed of a variety of plastic materials including polyethylene, polystyrene, and others, in a process that forms molded objects of substantial size that are strong enough for structural

purposes. Such structural foam material offers many advantages as a sectional swimming pool wall, and a preferred configuration of such wall sections is shown in the drawings.

Each of the sections **10** has a vertical, facing wall **11** continuous for the length of the section and disposed to form the inside of the pool wall. Wall **11** extends from top to bottom and end to end of each section **10** to support a liner containing the pool water.

A base **12** is formed integrally with facing wall **11** along the bottom edge of facing wall **11**. Base **12** is perpendicular to facing wall **11** and extends outwardly relative to the pool from the back of facing wall **11**. Base **12** is relatively wide, as illustrated, to afford a secure footing for section **10**.

A coping wall **13** is formed integrally with facing wall **11** at the top of facing wall **11**. Coping wall **13** extends outwardly relative to the pool from the back of facing wall **11**, and preferably has a curved top **14**, as illustrated, to provide a swimming pool coping. Curved top **14** preferably extends forward of the front face of facing wall **11** in a curved edge **15** slightly overhanging the pool water. A slot **16** is preferably molded in the top of the front face of facing wall **11** just below curved edge **15** to extend longitudinally of each section **10** to provide an anchorage for the swimming pool liner.

At least one rib **17** is formed integrally with base **12**, coping wall **13**, and the back of facing wall **11** to extend vertically between coping wall **13** and base **12**. Sections **10** can be made in any convenient length and preferably several ribs **17** are used on each section **10**, especially if relatively long sections are used. Ribs **17** can be oriented other than vertically.

End walls **18** and **19** are formed integrally with coping wall **13**, facing wall **11**, and base **12** at each end of sections **10**. End walls **18** and **19** are disposed in mutually abutting relation, as shown in FIG. **1**, between adjacent sections **10**. Each end wall **19** has projections **20** extending outward in the longitudinal direction of sections **10** from the outer face of end wall **19**, and each end wall **18** has recesses **21** extending inward in the longitudinal direction of sections **10** from the outer face of end wall **18**. When adjacent sections **10** are placed together in abutting relation as shown in FIG. **1**, projections **20** extend into recesses **21** to align sections **10** accurately. Many other arrangements of projections and recesses for alignment of sections **10** are possible within the spirit of the invention. Aligned and abutted sections fitted together with mutual projections and recesses are secured together by any convenient means such as bolts **22**.

A corner piece **23** is shown in FIG. **3** for connecting pairs of sections **10** at right angles to each other at the corners of the pool wall. End wall **18** of section **23** has recesses **21** for receiving projections **20** of an end wall **19** of an adjacent section **10**, and end wall **19** of corner piece **23** has projections **20** to fit into recesses **21** in an end wall **18** of an adjacent section **10**. The top **24** of corner piece **23** is given a coping shape matching the top **14** of sections **10**. A vertical rib **25** is formed integrally with corner piece **23** to extend from the bottom to the top of corner piece **23** to strengthen corner piece **23**.

In use, sections **10** are light enough to be handled manually, and are merely set in place in the excavation, aligned, fitted together with interlocking projections and recesses, and secured together to form a continuous pool wall. No separate coping or other parts are re-

quired, and after the wall is made, it is merely necessary to backfill the excavation, fit the lining in place, and secure it in slot **16**. Structural foam sections **10** provide an accurate fit, standard and unerring sizes, lightweight, resilience and easy assembly. They are also rust-proof, rot-proof, mildew-proof, and enjoy a long life after installation.

Persons wishing to practice the invention should remember that other embodiments and variations can be adapted to particular circumstances. Even though one point of view is necessarily chosen in describing and claiming the invention, this should not inhibit broader or related applications within the spirit of the invention. For example, different strengthening ribs and different projections and recesses for aligning adjacent sections can be used within the spirit of the invention.

I claim:

1. A swimming pool wall comprising:

(a) a plurality of uniform sections;

(b) means for securing said sections together;

(c) said sections being formed of molded structural foam and comprising:

(1) a vertical, flat, facing wall continuous for the length of said section;

(2) a base formed integrally with said facing wall;

(3) said base extending along the bottom of said facing wall;

(4) said base being perpendicular to said facing wall;

(5) said base extending outwardly from the back of said facing wall;

[(5)**]** *(6)* a coping wall formed integrally with said facing wall;

[(6)**]** *(7)* said coping wall extending along the top of said facing wall;

[(7)**]** *(8)* said coping wall extending outwardly from the back of said facing wall;

(9) said coping wall having a curved portion extending forward of the front face of said facing wall;

[(8)**]** *(10)* end walls formed integrally with said facing wall, said base, and said coping wall;

[(9)**]** *(11)* said end walls extending vertically between said base and said coping wall at each end of said section;

[(10)**]** *(12)* said end walls extending outwardly from the back of said facing wall;

[(11)**]** *(13)* said end walls of adjacent ones of said sections having mutually abutting surfaces;

[(12)**]** *(14)* said mutually abutting surfaces having aligned projections and recesses arranged for fitting together to align said adjacent sections;

[(13)**]** *(15)* a rib between said end walls;

[(14)**]** *(16)* said rib being formed integrally with the top of said base, the bottom of said coping wall, and the back of said facing wall; and

[(15)**]** **[**said coping wall having a curved portion extending forward of the front face of said facing wall.**]**

(17) said rib extending outwardly from the back of said facing wall.

2. The swimming pool wall of claim **1** wherein said **[**sections**]** *projections* and said recesses are on an opposite end of said sections.

3. The swimming pool wall of claim **1** wherein the front face of said facing wall is formed with a shallow, longitudinal slot in the region of said coping wall.

4. The swimming pool wall of claim **1** including molded structural foam corner pieces arranged to connect pairs of said sections oriented perpendicular to each other.

5. The swimming pool wall of claim **4** wherein said corner pieces include end walls having said projections and said recesses.

6. The swimming pool wall of claim **4** wherein said front face of said facing wall is formed with a shallow slot on the region of said coping wall.

7. The swimming pool wall of claim **6** wherein said projections are on one end of said sections and said recesses are on an opposite end of said sections.

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