United States Patent

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[54] SWIMMING POOL WALL COPING

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

[58] **Field of Search** 4/172.21, 172, 172.19, 172.17, 4/172.15; 52/588, 169, 288

[56] **References Cited**

UNITED STATES PATENTS

3,298,039	1/1967	Schmarler	4/172.21
3,310,814	3/1967	Lipman	4/172.21
3,440,780	4/1969	Adam et al	4/172 X
3,444,659	5/1969	Shanni	4/172.19 X
3,512,326	5/1970	Greene	52/588

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[57] **ABSTRACT**

A coping for the top of a swimming pool wall. The coping consists of successive cap segments, each having a rigid grooved outer flange and an inner resilient flange having a locking groove facing the groove of the rigid flange. The segments are snapped on spaced elongated anchor plates secured transversely on the top wall of the pool enclosure. The segments are provided with locking recesses to lockingly receive the enlarged marginal bead of a waterproof pool liner, or alternatively, the liner may be clampingly secured between the anchor plates and the top wall of the pool enclosure.

12 Claims, 4 Drawing Figures

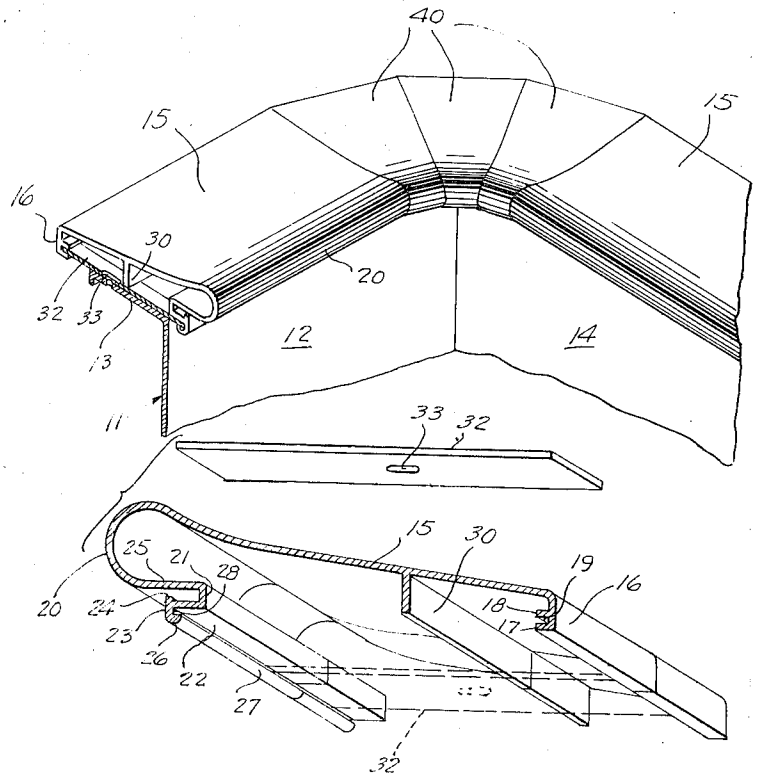


FIG. 1.

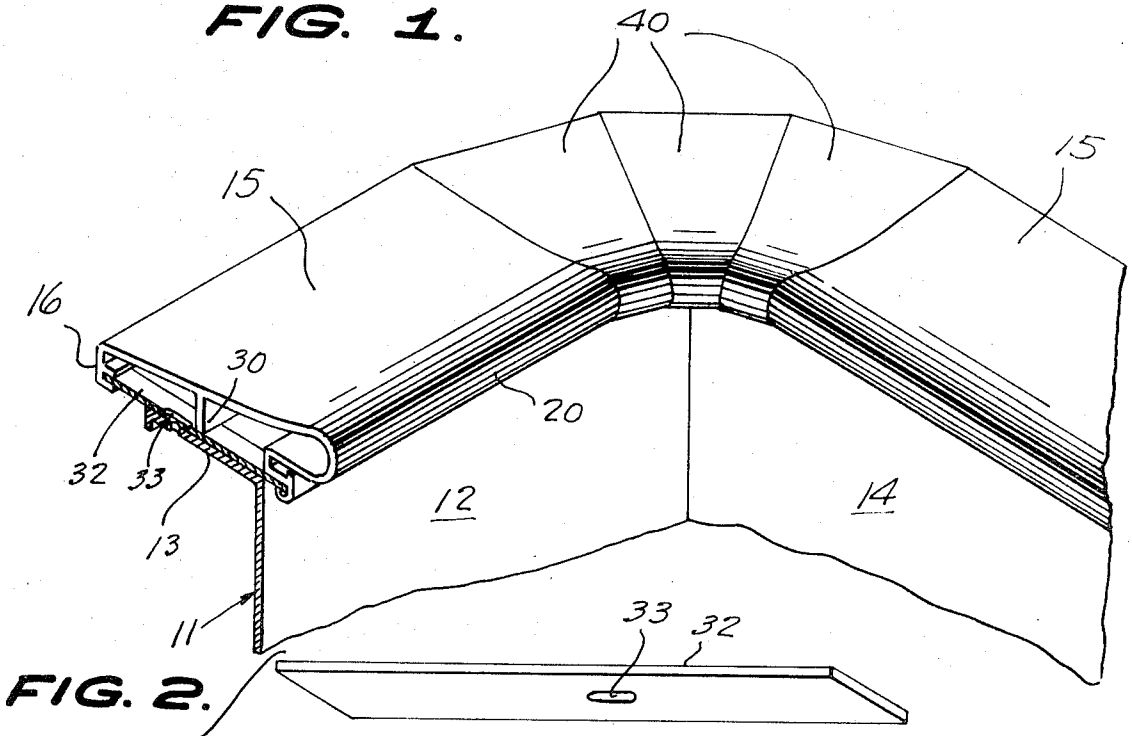


FIG. 2.

FIG. 3.

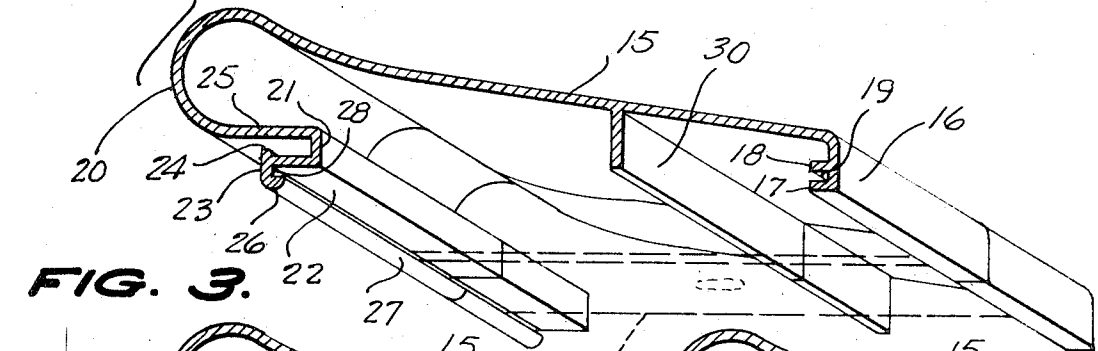
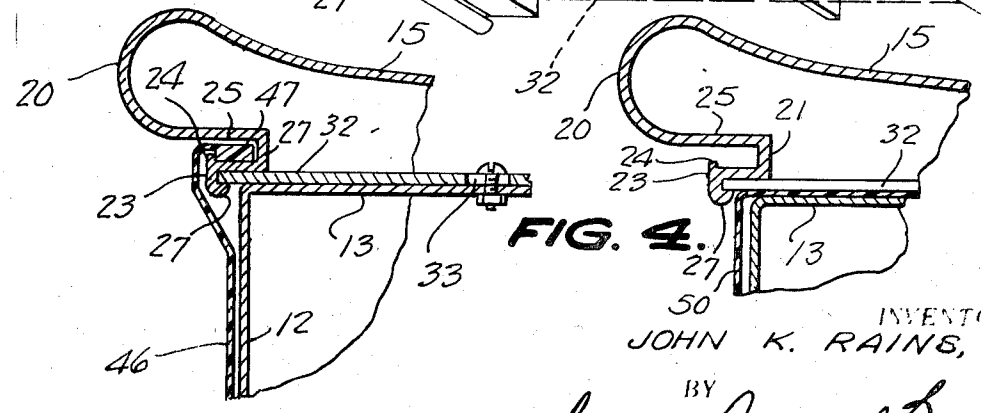


FIG. 4.



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SWIMMING POOL WALL COPING

This invention relates to copings, and more particularly to a coping structure adapted to be used on the top of a swimming pool wall. A main object of the invention is to provide a novel and improved swimming pool wall coping structure which involves relatively simple components, which is very easy to install, and which can be readily removed, whenever it is necessary to make repairs to the associated swimming pool, for example, whenever it is necessary to repair or change the waterproof liner used with the pool.

A further object of the invention is to provide an improved swimming pool wall coping which can be employed on a large variety of swimming pools, which can be employed either with a liner of the type having a marginal bead or of the type not provided with such a bead, and which may be installed rapidly and without requiring any special tools.

A still further object of the invention is to provide an improved swimming pool wall coping structure which involves relatively inexpensive parts, which provides total protection for the top of a swimming pool wall, which is easy to remove, as required, which provides a smooth rounded contour for the top of the swimming pool wall, and which is highly durable.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawing, wherein:

FIG. 1 is a perspective view of a corner portion of a swimming pool enclosure provided with a coping assembly in accordance with the present invention.

FIG. 2 is a perspective view, partly in cross section, showing a section of coping and an anchor plate employed therewith, in accordance with the present invention.

FIG. 3 is a transverse vertical cross-sectional view taken through a coping segment according to the present invention, shown mounted on the top wall of a swimming pool enclosure and employed with a swimming pool liner of the type having a marginal bead.

FIG. 4 is a transverse vertical cross-sectional view, similar to FIG. 3, but showing the structure employed when the coping segments are mounted and used in conjunction with a swimming pool liner not having a marginal bead but arranged to overlap the top of the wall of the swimming pool enclosure.

Referring to the drawings, 11 generally designates a swimming pool enclosure of the type having upstanding wall segments 12 provided with outwardly projecting horizontal top flanges 13. As will be presently explained, the swimming pool enclosure may have any type of wall construction, provided that it has a top surface of sufficient width to accommodate the coping structure presently to be described.

In the typical illustrated arrangement shown in FIG. 1, the structure at a corner of the pool enclosure is illustrated, namely, for the purpose of illustrating the type of coping elements employed at a corner, in accordance with the present invention. Thus, the upstanding enclosure wall 12 joins with another upstanding enclosure wall 14 at a right angle.

The coping assembly comprises a succession of similar segments, designated generally at 15, each segment comprising a generally channel-shaped body provided at its outer edge with a relatively rigid depending marginal flange 16, the flange 16 being shaped to define a pair of inwardly directed parallel ribs 17 and 18 forming an inwardly facing groove 19 therebetween. The inner margin of the body 15 comprises an arcuately curved resilient channel 20 which defines a smoothly rounded inner edge at the inside of the coping and which terminates in an outwardly facing bottom channel 21. As shown in FIG. 2, the outwardly facing channel 21 is spaced a substantial distance inwardly from the smoothly curved outer portion of the resilient channel 20 so that there is considerable overhang of the coping on the inside portion thereof with respect to the enclosure wall section 12 or 14.

The bottom leg 22 of the channel 21 is provided with a vertical marginal flange 23 having a top rib 24 which projects upwardly toward the horizontal bottom wall 25 of channel 20. The flange 23 is provided at its bottom edge with an inwardly

turned rib 26 which is arcuately curved to define a rounded edge 27 at its inside portion. A locking groove 28 of rectangular shape is defined between the bottom rib 26 and the horizontal bottom wall 22 of the channel 21.

Each coping segment 15 is provided at its intermediate portion with a depending supporting rib 30 which is parallel with the inner and outer elements 16 and 20 and which is engageable with transverse anchor plates 32 secured on the top flange 13 of the swimming pool enclosure at spaced locations thereon for supporting the coping segments. Thus, each anchorplate 32 is provided with a slot 33 so that it can be bolted or otherwise fastened on the top flange 13 or other top wall surface of a swimming pool enclosure at locations corresponding to the joints between adjacent coping segments 15. As shown in dotted view in FIG. 3, the anchor plates 32 are fastened transversely on the top wall surfaces of the swimming pool enclosure at locations such that their outer edges will be lockingly receivable in the opposite grooves 19 and 28 of a pair of adjacent coping segments 15.

In mounting the segments, the anchor plates 32 are first fastened in position on the top flange 13 or other top surface portions of a swimming pool enclosure at the locations above described, and the segments 15 are lockingly engaged therewith by first engaging the outer grooves 19 with the outer ends of the plates 32 and then exerting downward pressure on the inner end portion of the segment so that the curved surface 27 of the bottom rib 26 will slide downwardly past the inner end of an anchor plate and then be snapped into locking engagement with the anchor plate with the inner end of the anchor plate engaged in the groove 28 of the segment. A series of coping segments may thus be quickly installed in sequence. At the corners of the enclosure, the coping segments are of flaring shape, namely, they comprise three outwardly flaring segments 40 which are otherwise similar in cross-sectional shape to the normal coping segment 15. The corner which comprises a right angle may thus be subdivided into three 30° segments, as shown in FIG. 1, providing a smooth corner joint.

When the associated waterproof pool liner, shown at 46 in FIG. 3, is of the type provided with a thickened marginal bead 47, the bead may be lockingly engaged in the inside recess defined in channel 21 by forcing the bead 47 between the upstanding rib 24 and the channel wall 25 so that the bead is seated in the recess. The inner marginal portion 20 of the coping segment is sufficiently yieldable so that the wall 25 may be flexed slightly upwardly to facilitate the entry of the bead 47. The liner bead 47 is thus locked inside the channel 21 and the liner is securely held in its proper position in the swimming pool enclosure.

In an alternate situation where the liner does not have a marginal bead 47 but is of the overlapping type, shown at 50 in FIG. 4, the margin of the liner is overlapped on the top flange 13 or top wall surface of the swimming pool enclosure and is clampingly secured between the anchor plates 32 and the top wall element 13 of the swimming pool enclosure, as clearly illustrated in FIG. 4. The coping segments are then mounted on the anchor plates in the same manner as above described and as is clearly illustrated in FIG. 1.

The coping segments 15 may be made of any suitable material, such as metal, plastic, or the like. In a typical embodiment of the invention, the coping segments 15 were made of extruded aluminum. The tapered corner segments 40 are preferably prefabricated so as to be available for instant use in the field in forming the corner assemblies of the copings. The straight-portion coping segments 15 may be cut to appropriate lengths at the time of installation. The anchor plates 32 are preferably of uniform size, for example, may be made of ⅛-inch thick steel with a width of approximately 2 inches and a suitable length, for example, a length of 5 inches. The length of the anchor plates 32 will depend upon the specified widths of the coping segments, since the nominal distance between the groves 19 and 28 determines the required length of the anchor plates 32. In a typical installation, the anchor plates 32 were secured to the top of the pool enclosure wall structure at

approximately two foot intervals, and the segments **15** were cut to lengths of approximately 4 feet to correspond with the distance between successive anchor plates.

As above mentioned, the anchor plates **32** may be secured to the top surfaces of the upstanding pool enclosure walls in any suitable manner, for example, by welding, by screws or bolts, by nails, by rivets, or the like, depending upon the nature of the pool enclosure wall construction.

While a specific embodiment of an improved swimming pool coping structure has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. In a swimming pool, an enclosure comprising upstanding walls having top surfaces, a plurality of transversely extending flat anchor plates secured in spaced-apart relation on said top surfaces for endwise adjustment transversely of said wall and having end portions respectively projecting outwardly and inwardly beyond said top surfaces, and coping segments overlying said anchor plates and each having respective outer and inner marginal depending flange portions encompassing the ends of said anchor plates and releasably lockingly interengaged with said end portions of the anchor plates.

2. The swimming pool of claim **1**, and wherein said depending flange portions are formed with opposing longitudinal grooves receiving the end portions of said elongated plates.

3. The swimming pool of claim **2**, and wherein at least one of said depending flange portions of each segment is resilient.

4. The swimming pool of claim **3**, and wherein the outer depending flange portion of each segment is rigid.

5. The swimming pool of claim **4**, and wherein the inner margin of each segment comprises an arcuately curved generally U-shaped resilient loop provided with a bottom inwardly facing channel having a horizontal bottom wall, said horizontal bottom wall having a depending terminal flange provided with an outwardly facing longitudinal groove for receiving the inner end portion of one of said elongated plates.

6. The swimming pool of claim **5**, and wherein said channel underlies and is spaced back a substantial distance from the bight portion.

7. The swimming pool of claim **6**, and wherein said terminal flange has a rounded bottom edge to facilitate snapping the terminal flange into locking engagement with the inner end portion of said one of the elongated plates subsequent to interengaging the rigid depending outer flange portion of the coping segments with the outer end portion of the plate.

8. The swimming pool of claim **7**, and wherein each coping segment is provided with a depending intermediate longitudinal rib engaging on the intermediate portions of the associated transversely extending anchor plates.

9. The swimming pool of claim **8**, and an upstanding rib rising from the top end of said terminal flange toward the bottom wall of said resilient loop, defining rearwardly thereof a locking recess for lockingly receiving the bead of a plastic swimming pool liner.

10. A coping segment for use with an enclosure top wall of the type having oppositely extending anchoring means thereon comprising a body having parallel opposite marginal portions, a depending relatively rigid flange formed with an inwardly facing grove at one of said marginal portions, and a depending relatively resilient flange at the other marginal portion, said resilient flange being formed with a groove facing the groove of said relatively rigid flange, said grooves in said flanges being adapted to engage over said oppositely extending anchoring means.

11. The coping segment of claim **10**, and wherein said resilient flange comprises a generally U-shaped member presenting a rounded external edge surface at said other marginal portion, said U-shaped member having a bottom wall formed with an underlying outwardly facing channel, said channel being provided with a depending flange at its bottom edge, the last-named groove being formed in said last-named depending flange.

12. The coping segment of claim **11**, and an upstanding rib at the bottom edge of said underlying outwardly facing channel.

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