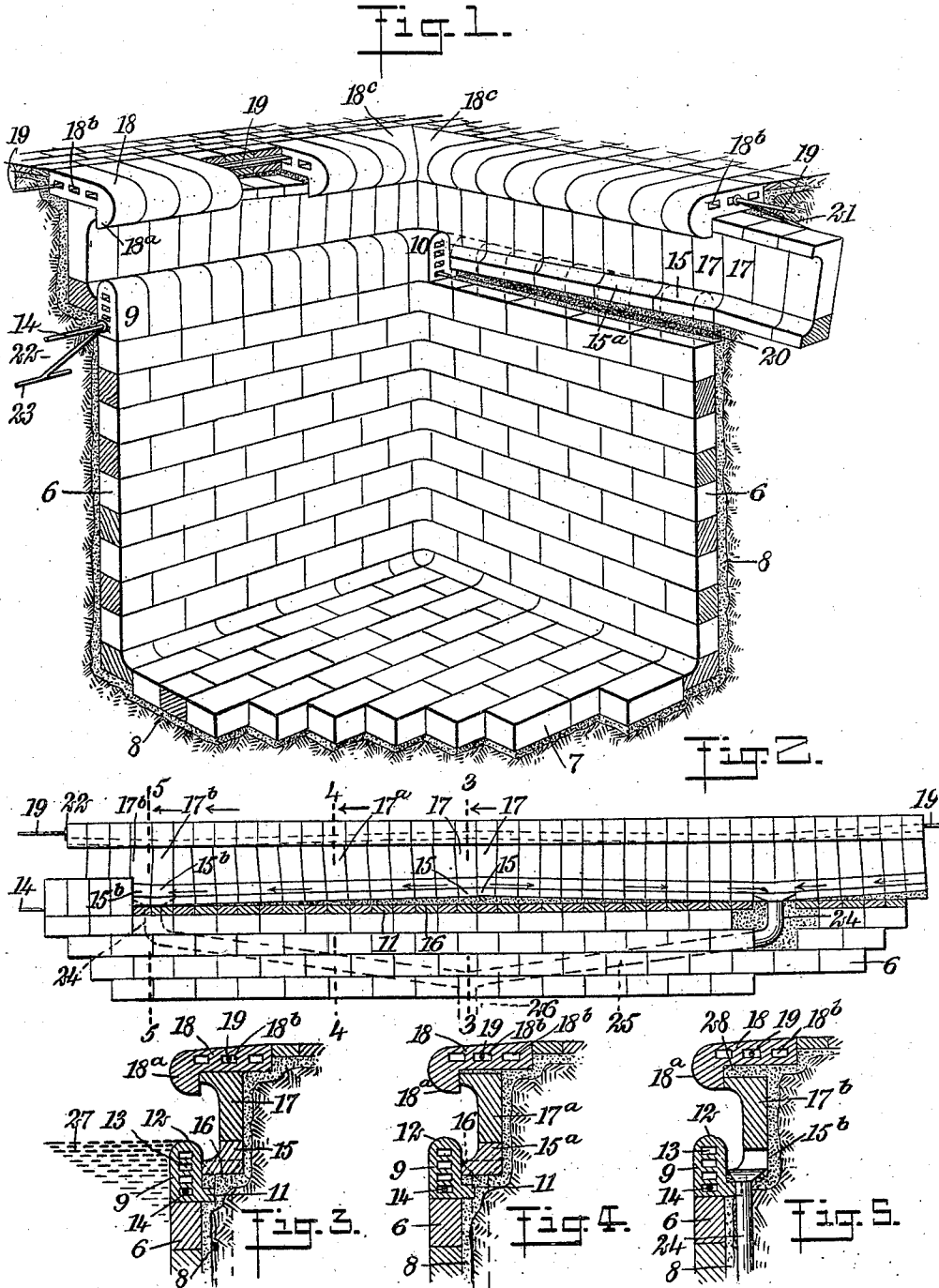


J. F. BOORAEM.
LIFE RAIL, CAP COURSE, AND GUTTER CONSTRUCTION.
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Patented Mar. 21, 1911.



WITNESSES

Walton Harrison
Walton Harrison

INVENTOR

John F. Booraem

BY

Munn & Co.
Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN FRANCIS BOORAEM, OF GREENWICH, CONNECTICUT.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN F. BOORAEM, a citizen of the United States, and a resident of Greenwich, in the county of Fairfield and State of Connecticut, have invented a new and Improved Life-Rail, Cap-Course, and Gutter Construction, of which the following is a full, clear, and exact description.

My invention relates to life rail, cap course and gutter constructions, of the kind used in relation to indoor or exterior swimming pools and similar bathing fixtures.

The particular purpose of my invention is to construct a combined life rail, cap course and gutter, so as to form a suitable boundary for an indoor swimming pool, the life rail being made up of units held together partly by their settings and partly by the aid of one or more tie rods or tie wires threaded directly through them, the cap course being built of separate units through which are threaded tie rods binding them together, the gutter being thus made of units of improved form. Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a fragmentary perspective showing a portion of a swimming pool provided with my various improvements; Fig. 2 is a view partly in section and partly in elevation, showing the construction and arrangement of the units used in my improved life rail, cap course and gutter; Fig. 3 is a substantially vertical section upon the line 3—3 of Fig. 2, looking in the direction of the arrow and showing how the various units are fitted together at the point where the section line is taken; Fig. 4 is a section upon the line 4—4 of Fig. 2, looking in the direction of the arrow, and showing the relative positions of the various units at the particular point represented by this section line; and Fig. 5 is a section upon the line 5—5 of Fig. 2, looking in the direction of the arrow, and showing the parts as they appear at this particular point.

A number of tile bricks, or marble slabs, or mosaic tiles or some solid concrete members 6 are formed into the wall of the pool which is provided with a bottom of tile brick 7, the wall and its bottom being backed by a filling 8 of concrete. A number of units 9, each having generally the form of a brick or slab, are fitted together so as to form

the life rail. At 10 are units having generally the same cross section as the units 9, but curved or mitered, and thus formed into corner pieces which are employed for the purpose of avoiding obvious difficulty at the corners. Each unit or brick 9 is provided with an upper convex surface 12 having generally a curved surface, preferably as shown, but which may be varied. Each of these units is further provided with an extended portion or heel 11. The purpose of the heel is to anchor the unit in position. Each unit 9 is provided with a number of channels 13 extending entirely through it and disposed parallel with each other, these channels being formed in the unit at the time when it is molded. The corner pieces 10 are also provided with these channels. Steel tie rods 14 extend through one or more of the channels 13 for the purpose of holding the various units 9, 10 together in the form of a continuous life rail. But metal ties are not necessary, as cement filled in the holes, with the heel under other construction, is more than sufficiently strong.

Gutter bricks are shown at 15, 15^a, 15^b and are disposed at slightly different levels, these bricks being slightly inclined for this purpose, as will be understood from Fig. 2. A portion 16 of the filling 8 of concrete or other material having sufficient strength, supports the gutter bricks 15, 15^a, 15^b, and forms a setting for the same. The gutter bricks 15, 15^a, 15^b are slightly concave, as will be understood from Fig. 2. Resting upon the gutter bricks, 15, 15^a, 15^b, and also being slightly concave, are a number of inverted gutter bricks 17, 17^a, 17^b; these form the upper halves of the gutter units.

A number of bricks 18 of suitable form are used together in forming the cap course. Each brick 18 is inclined slightly and is provided with an overhanging portion 18^a of convex form, and is further provided with a number of separate channels 18^b. Threaded through the bricks 18 is a tie rod 19. At 18^c I employ miter bricks as corner pieces, the tie rods 19 extending also through these miter bricks. The concrete 8 while in a plastic state is formed around and back of the gutter bricks and rail-heels 11. My purpose in inclining the bricks 18^a is to facilitate the floor drainage.

Connected with the tie rods 14, 19, at intervals are anchor links 21, 22, each having the form of a small rod or wire and pro-

vided at one of its ends with an anchor rod 23. In order to fit the anchor links 21, 22 into position in the joints between the units the latter may be chiseled slightly on the ends inside and below the level of the gutter bricks, if necessary, to make room for the links. The tie rods are concealed for the reason that they do not protrude through any part of the units ordinarily visible.

10 The tie rods and tie wires as well as the anchor links are preferably made of non-corrosive material, so as to remain unaffected by the action of any water which may reach them at any time. They are not absolutely essential.

15 Drainage pipes are shown at 24 and are connected with the gutter at the lowest level thereof. These drainage pipes are provided with slanting portions 25 each connected with a discharge pipe 26 indicated by dotted lines in Fig. 2. The water level of the swimming pool is indicated at 27. The life rail (made up of units 9, 10) is at all times exactly level, and the top of this rail coincides with the upper level of the water 25 27. Any impurities floating upon the water are thus carried off, being drifted over the rounded surface 12 of the life rail and allowed to run off in the gutter which, as above indicated, has generally a sloping form. In order that the drainage may be thorough, I recommend that the branch pipes be made sufficiently large and that the surrounding portions 25 be so formed and 35 proportioned as to have no trouble in carrying off the water. It will be noted, however, that so far as the appearance of the various parts is concerned, the sloping of the gutter is not objectionable because, practically speaking, it is invisible.

40 At 28, immediately over the gutter bricks 17, 17^a, and under the cap course, are portions of the concrete, which constitute a filling, the general thickness of which tapers slightly, in order to compensate for the varying thickness of the portion 16 of concrete below the gutter bricks 15, 15^a, 15^b.

From the foregoing description the operation of my device will be readily understood.

50 My invention relates, in a large measure, to the parts used in constructing the swimming pool, and consequently my device comes into use mainly during the operation of building. The various units being fitted in position, as above described, and the tie rods 14, 19 being threaded through and secured in any convenient manner, the device is ready for use.

60 The swimming tank construction above described possesses quite a number of advantages as regards the life rail, cap course

and the gutter. The device presents a complete and efficient surface drainage system, capable of removing all scum, dried skin, saliva and other floating substances from the surface of the water, and prevents accumulation of the same in the tank where otherwise it would tend to collect. The necessity for cleaning the tank is therefore reduced to a minimum. All drippings from the bathers and dirt falling from the feet of observers standing upon the floor, pass into the gutter rather than into the water to be used for bathing. The action of the life rail is such that there is a constant flushing. The life rail being exactly at the water's edge and being perfectly level is within easy reach of the swimmer; such being the case, the life rail is much more convenient and practical than is the case with festooned life ropes or rigid railings mounted above the surface of the water. Moreover, the life rail described is much more effective for the reason that it is more easily grasped by any swimmer and especially by one who is nervous, excited or frightened and thus in more or less danger.

I do not limit myself to the use of any particular material to be used in the construction above described. I recommend, however, that the bricks employed shall not be provided with soft lead glazes but rather with hard pure enamel on a fire clay body, thus being able to stand the heat, cold and various changes due to the varying quantities of dampness.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. The combination of a wall for retaining water or the like, a filling at the top of said wall, said filling being provided with a sloping channel, and a plurality of units provided with shelves for extending under said channel, said units being formed into a life rail.

2. In a gutter, the combination of a plurality of bricks provided with a surface, to be used as the bottom of a gutter and further provided with surfaces for engaging a life rail, and a plurality of inverted bricks engaging said first-mentioned bricks and providing surfaces for forming the top of the gutter, said inverted bricks being further provided with surfaces for engaging a cap course.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN FRANCIS BOORAEM.

Witnesses:

C. A. GARDNER,
C. ELLIOT BLADES.