A free-standing swimming pool comprising a rigid wall supported by posts with a coping over at least part of its periphery, the coping including: profiled sections (11) lapping over the top edge of the wall between two consecutive posts (5), these sections having longitudinal cells (15, 16) extending into their respective end faces; rigid plates (17) resting on the top faces of the posts and on which the facing ends (14) of two successive profiled sections rest; and connecting flange units (18) resting respectively on the plates and screwed through the corresponding plate into the top face of the posts, these flange units each featuring transverse positioning and vertical fixing means (22, 25) engaging inside the cells (15, 16) of two facing profiled sections to hold these in a correct relative position.
FREE-STANDING SWIMMING POOL WITH RIGID WALL AND COPING

[0001] This invention generally concerns free-standing swimming pools with rigid walls and, more specifically, improvements made to free-standing swimming pools comprising at least one rigid wall supported by posts or uprights, a coping being provided over at least part of the periphery of the swimming pool.

[0002] A known approach is to equip the top edge of the wall of a free-standing swimming pool with a profiled section which, one the one hand, provides protection for preventing persons injuring themselves on this generally thin top edge and, on the other hand, enhances the esthetic appearance of the swimming pool. These sections can be of highly varied conformation.

[0003] Construction of a coping for a swimming pool of this type proves difficult if an esthetic appearance is sought (invisible or essentially invisible assembly means) and possibly because of potential overhanging of the coping towards the outside in the presence of a relatively thin wall.

[0004] The object of the invention is essentially to propose improved, yet simple, means suitable for allowing a swimming pool as mentioned above to be equipped with a coping, under acceptable economic conditions and irrespective of the composition of the swimming pool wall.

[0005] To this end, a free-standing swimming pool as described in the preamble and equipped according to the invention is characterized in that it includes:

- [0006] profiled coping sections suitable for lapping over the top edge of the wall and whose length corresponds to the distance separating two consecutive posts,

- [0007] said profiled sections comprising longitudinal cells extending into their respective end faces,

- [0008] rigid plates resting on the top faces of the posts, the facing ends of two successive profiled sections resting on said plate at a distance from each other, and

- [0009] connecting flange units suitable for resting respectively on said plates and securely fixed by screwing through the corresponding plate into the top face of the posts, these flange units each comprising transverse positioning and vertical fixing means suitable for engaging inside the aforesaid cells of the facing ends of two consecutive profiled sections to hold these in a correct relative position.

[0010] The means implemented according to the invention are structurally simple, the component parts can be mass-produced at low cost, and these means are efficient because they allow, using invisible or essentially invisible assembly means, installation of a coping which may project transversely beyond the swimming pool wall, which is structurally resistant and on which a person can, in particular, lean or even place a child, without damaging it.

[0011] The features embodying the invention can find their application whatever the composition of the swimming pool wall and, in particular, when the at least one wall is made up of panels, which are connected in succession by said posts.

[0012] The features embodying the invention can therefore find an advantageous application in the case of a swimming pool comprising at least one wall, of significant thickness therefore, composed of panels made of wood or a material with the appearance of wood (and which can be formed by superposing planks, for example), which are connected in succession by posts or uprights at least partly made of wood or having the appearance of wood. In this case, the features embodying the invention can also find their application in a swimming pool comprising an internal metal wall, an external cladding wall composed of panels made of wood or a material with the appearance of wood, and posts of composite structure, with the internal part made of metal and the external part made of wood or a material with the appearance of wood, said posts having the respective panels of the two walls, whilst securely fixing in succession the panels of the external wall, and each said profiled coping section being suitable for lapping over both an internal panel and an external panel. The favorable case under which the double wall constitutes a significant, even substantial, thickness, facilitating efficient support of the coping, then exists.

[0013] Within the scope of this invention, the profiled coping sections are preferably made of wood or a material with the appearance of wood.

[0014] Advantageously, each flange unit comprises opposing lateral lugs, suitable for engaging in respective cells of the facing ends of two adjacent profiled sections, and which are equipped to exert an elastic force within said cells to hold said profiled sections in a correct relative position in the transverse direction.

[0015] By simple means, each flange unit comprises opposing lateral studs suitable for fitting into respective cells of the facing ends of two adjacent profiled sections to hold said ends in a correct vertical relative position.

[0016] Two successive profiled sections can be perfectly positioned both vertically and horizontally by combining the above two features, which results in good visual appearance of the coping. Moreover, this accurate relative positioning is obtained without the assembly parts being apparent.

[0017] In a preferred exemplary embodiment, each flange unit has a U-shaped body with longitudinal flanges, whose ends are bent outwards to form the aforesaid lugs, the two lugs located at the same end of the flange unit forming between them an angle approximately equal to the angle formed by two consecutive wall panels between them. Moreover, it is then simple to allow for at least two respective holes to be drilled through the two longitudinal flanges of each flange unit and for a rod to be inserted through these holes to protrude externally on each side of the two flanges, the protruding parts of the rod forming two opposing studs.
Advantageously, such a flange unit can therefore be metal and, in particular, formed by a cut-bent metal plate or formed by cast metal, such that it is structurally resistant and can be mass-produced.

It should also be stressed that the implementation of the means according to the invention and, in particular, of the aforesaid flange unit permits easy adaptation to the exact outline of the swimming pool and, in particular, adaptation to the angle formed by two consecutive panels between them as a function of the number of these panels, in other words as a function of the exact polygonal shape of the swimming pool.

To complete the esthetic appearance of the coping, a cover box can be provided to conceal the connecting flange unit.

The means according to the invention can suit every coping configuration sought, whether it extends over only part of the swimming pool periphery or over the whole periphery.

The invention will be better understood on reading the following description of some preferred embodiments provided only as nonlimiting examples. In this description, reference is made to the appended drawings, in which:

FIG. 1 is a casual view of part of a metal and wood double-wall swimming pool showing the connection between consecutive panels and their bracing;

FIG. 2 is an end view of an example of a profiled section suitable for forming a coping according to the invention;

FIG. 3 is a top view of a connecting flange unit between two consecutive profiled coping sections suitable for implementation according to the invention;

FIG. 4 is a casual view of the connection arrangement for two consecutive coping sections, the two sections being presented but not placed in their assembled position;

FIG. 5 is a casual view showing the two coping sections in an assembled position; and

FIG. 6 is a casual view showing the two coping sections in an assembled position with the connecting flange unit covered.

In the following description given in conjunction with the appended drawings, the type of free-standing double-wall swimming pool described in document FR 2 843 769 is more specifically referred to because this is a preferred, yet non-exclusive, area of application for the features embodying the invention.

As illustrated in FIG. 1, a free-standing swimming pool of this type comprises an internal wall 1 composed of metal panels 2 arranged along a closed, in principle polygonal, outline, this internal wall being structurally resistant to oppose the thrust of the water, and an external wall 3 composed of panels 4 made of wood or a material with the appearance of wood (these are full panels or preferably panels formed by stacking planks), this external wall being essentially intended for cladding. Posts 5 of composite structure, with the internal part 6 made of metal and the external part 7 made of wood or a material with the appearance of wood, cooperate with the ends of the panels of both walls and brace them such that the two walls remain separated from each other, so that the wood or the material with the appearance of wood does not come into contact with the water or condensation humidity appearing on the metal walls.

In the example illustrated in FIG. 1, the metal internal part 6 of the post is formed by a profiled section of suitable conformation, for example a U-shaped steel, which claps partially the external part 7 made of wood or a material with the appearance of wood and this metal profiled section can feature a top flap which forms a flange 8 through which a threaded hole 9 is drilled.

Still in the example illustrated in FIG. 1, the external part 7, for its part, is formed by a profiled section made of a material with the appearance of wood and the latter profiled section comprises various cells 10 extending longitudinally. It is intended to designate by cells either channels penetrating the full length of the profiled section and extending to its two ends or sections or blind initial lengths of such channels hollowed out in the vicinity of the profiled section ends.

The top faces of the panels 2 and 4 and the parts 6 and 7 of the post 5 are located at approximately the same level.

Other details of this swimming pool may be found in document FR 2 843 769.

The coping required to equip the above swimming pool is formed from profiled sections composed of any suitable material, in this case preferably of wood or a material with the appearance of wood to harmonize visually with the cladding wall. The end of such a profiled coping section 11, composed of a material with the appearance of wood, is represented in FIG. 2. The profiled section 11 comprises a top 12 and two longitudinal flanges 13, which are turned downwards. The end face 14 reveals various cells, which can extend over the full length of the section 11.

In particular, the presence is noted of two respective cells 15 of vertically elongated cross section within or in line with the two flanges 13. The presence is also noted of two cells 16 separated from each other and of horizontally elongated cross section.

Many solutions can of course be envisaged for the conformation of the coping sections 11. In particular, if formation of a very wide coping is required, several (for example two) profiled sections can be placed edge to edge to obtain the required width.

A casual view in FIG. 4 illustrates an arrangement for connecting two coping sections such as those shown in FIG. 2, these two coping sections being shown separated from each other so that other components of the connection arrangement are visible.

In FIG. 4, the two cladding panels 4 are seen framing the external part 7 of a post 5. On the top face of the post 5 is mounted an essentially rigid plate 17, for example in the form of a metal plate, which creates a relatively flat, stable bearing surface whose lateral dimensions, at least, can be greater than those of the top face of the post 5.

A connecting flange unit 18, in the form of an elongated part extending approximately along the bisecting
line of the angle formed by the two cladding panels 4 as well as by the two profiled coping sections 11 between them, is mounted on the plate 17.

[0040] The connecting flange unit 18, a top view of which is shown in FIG. 3, comprises a U-shaped body 19 with an essentially flat bottom 20 resting on the plate 17 and two longitudinal flanges 21. The ends of the flanges 21 are bent outwards and form four respective elastic lugs 22, the two lugs 22 located at the same end of the connecting flange unit 18 forming an angle between themselves substantially equal to the angle which the two cladding panels 4 and the two coping sections 11 form between themselves.

[0041] The plate 17 and the connecting flange unit 18 are mounted together by screwing to the post 5. For this purpose, the plate 17 features holes 23 and the bottom 20 of the connecting flange unit 18 features elongated holes 24 (to facilitate its correct positioning) located opposite the holes 23. In particular, two holes 23 and two coinciding elongated holes 24 can be provided respectively arranged in line with the internal and external parts 6 and 7 of the post 5. For example, one hole 23 and one elongated hole 24 can be aligned with the threaded hole 9, shown in FIG. 1, at the top of the internal part 6 of the post 5, whilst the other hole 23 and the other elongated hole 24 can be located opposite the solid area 25, visible in FIG. 1, in the external part 7 of the post 5.

[0042] Finally, the connecting flange unit 18 is equipped with studs 25 extending laterally. In the example illustrated in FIGS. 3 and 4, these studs 25 are four in number and are arranged in two opposing pairs. In practice, the flanges 21 can be provided drilled with facing holes through which two rods 26 are inserted to extend transversely, the ends of these rods protruding outside the flanges 21 forming the aforesaid studs 25.

[0043] To ensure structural strength, it is preferable that the connecting flange unit 18 be metal and obtained, for example, from a cutting-bending operation or by injection casting in a metal alloy.

[0044] As can be seen in FIG. 4, assembly of the coping sections 11 is performed by inserting the lugs 22 into the end cells 15, the lugs bearing elastically against the respective cell walls, resulting in correct relative positioning of the coping sections in the transverse direction, and, at the same time, inserting the studs 25 into the aforesaid cells 16 by giving the studs 25 a diameter approximately equal to the small dimension of the cells 16, correct relative positioning of two consecutive coping sections is obtained in the vertical direction; preferably, it can also be arranged that the spacing between the two rods 26 is such that the studs 25 fit into the cells 16 near their respective ends, to create a mechanical stop limiting the capacity for transverse play of the coping sections.

[0045] In FIG. 5, the two coping sections 11 are shown in their final assembly position, the lugs 22 are incorporated in the cells 15 and the two profiled sections 11 are flush against the plate 17.

[0046] In FIG. 6, the box cover 27 is in place over the connecting flange unit 18 to conceal it. In the illustrated example, the box cover 27 is composed of a metal strip formed to correspond with the shape of the external outline of the top 12 and the flanges 13 of the coping sections 11, the box cover 27 can then be screwed at 28 onto lugs 29 provided at the ends of the connecting flange unit 18. Many possibilities can, of course, be envisaged as alternatives for finishing the connection of the two coping sections.

[0047] As stated above, the features described above are designed to install a coping made of wood or a material with the appearance of wood on a double-wall swimming pool with a composite structure, as described in the document FR 2 843 769, with external cladding panels made of wood or a material with the appearance of wood. In this case, the coping sections lap over the top edges of the two sets of internal panels 2 and external panels 4.

[0048] However, it is understood that the means proposed by the invention are not structurally linked to this particular type of swimming pool and, in particular, are linked neither to the type nor the number of walls. Consequently, these means can also be implemented for positioning a coping on a single-wall swimming pool (for example formed by continuous sheeting supported by posts or formed by metal panels interconnected by posts) and all the more if this single wall is relatively thick (for example a wood or analogous wall formed by stacking planks). Effective implementation of the invention is more linked to the cross section of the posts, which must be sufficient, particularly in the radial direction, to be able to support the plate 17 and the connecting flange unit 18 by screwing.

[0049] It is also stressed that the coping can overhang significantly, especially to the outside, particularly in the case of a single-wall swimming pool: the erection and assembly means embodying the invention may be suitable for supporting the coping effectively in such a case.

[0050] Finally, although it is customary for a coping, when present, to extend over the full periphery of a swimming pool, only part of the swimming pool periphery may be equipped within the scope of the invention, if so needed or desired.

1. A free-standing swimming pool comprising at least one rigid wall supported by posts, a coping being provided over at least part of the periphery of the swimming pool, wherein it includes:

- profiled coping sections (11) suitable for lapping over the top edge of the wall and whose length corresponds to the distance separating two consecutive posts (5),
- said profiled sections (11) comprising longitudinal cells (15, 16) extending into their respective end faces,
- rigid plates (17) resting on the top faces of the posts (5), the facing ends (14) of two successive profiled sections (11) resting on a plate (17) at a distance from each other, and
- connecting flange units (18) suitable for resting respectively on said plates (17) and securely fixed by screwing through the corresponding plate into the top face of the posts (5), these flange units (18) each comprising transverse positioning and vertical fixing means (22, 25) suitable for engaging inside the aforesaid cells (15, 16) of two facing profiled sections (11) to hold these in a correct relative position.

2. The swimming pool as claimed in claim 1, wherein it comprises at least one wall made up of panels, which are connected in succession by said posts.
3. The swimming pool as claimed in claim 2, wherein it comprises at least one wall (3) composed of panels (4) made of wood or a material with the appearance of wood, which are connected in succession by posts (5) at least partly (7) made of wood or having the appearance of wood.

4. The swimming pool as claimed in claim 3, wherein it comprises an internal metal wall (1), an external cladding wall (3) composed of panels (4) made of wood or a material with the appearance of wood, and posts (5) of composite structure, with the internal part (6) made of metal and the external part (7) made of wood or a material with the appearance of wood, said posts (5) bracing the two walls (1, 3), whilst securely fixing in succession the panels (4) of the external wall (3) and wherein each said profiled coping section (11) is suitable for lapping over both the internal wall (1) and the external wall (3).

5. The swimming pool as claimed in claim 4, wherein it comprises an internal wall (1) composed of metal panels, an external cladding wall (3) composed of panels (4) made of wood or a material with the appearance of wood, and posts (5) of composite structure, with the internal part (6) made of metal and the external part (7) made of wood or a material with the appearance of wood, said posts (5) bracing the respective panels (2, 4) of the two walls (1, 3), whilst securely fixing them in succession, and wherein each said profiled coping section (11) is suitable for lapping over both an internal panel (2) and an external panel (4).

6. The swimming pool as claimed in any one of claims 1 to 5, wherein the profiled coping sections (11) are made of wood or a material with the appearance of wood.

7. The swimming pool as claimed in any one of claims 1 to 6, wherein each flange unit (18) comprises opposing lateral lugs (22), suitable for engaging in respective cells (15) of the facing ends (14) of two adjacent profiled sections (11), and which are equipped to exert an elastic force within said cells (15) to hold said profiled sections (11) in a correct relative position in the transverse direction.

8. The swimming pool as claimed in any one of claims 1 to 7, wherein each flange unit (18) comprises opposing lateral studs (25) suitable for fitting into respective cells (16) of the facing ends (14) of two adjacent profiled sections (11) to hold said ends in a correct vertical relative position.

9. The swimming pool as claimed in claim 7 or 8, wherein each flange unit (18) has a U-shaped body (19) with longitudinal flanges (21), whose ends are bent outwards to form the aforesaid lugs (22), the two lugs (22) located at the same end of the flange unit (18) forming between them an angle approximately equal to the angle formed by two consecutive wall panels between them.

10. The swimming pool as claimed in claims 8 and 9, wherein at least two respective holes are drilled through the two longitudinal flanges (21) of each flange unit and a rod (26) is inserted through these holes to protrude externally on each side of the two flanges, the protruding parts of the rod (26) forming two opposing studs (25).

11. The swimming pool as claimed in any one of claims 1 to 10, wherein each flange unit (18) is metal and, in particular, formed by a cut-bent metal plate or formed by cast metal.

12. The swimming pool as claimed in any one of claims 1 to 11, wherein a box cover (27) is provided to conceal the connecting flange unit (18).

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