

(19)



(11)

EP 2 372 048 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

05.10.2011 Bulletin 2011/40

(51) Int Cl.:

E04H 13/00 (2006.01)

(21) Application number: **11462005.7**

(22) Date of filing: **30.03.2011**

(84) Designated Contracting States:

**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

Designated Extension States:

BA ME

• **Tóth, Attila**

1165 Budapest (HU)

(72) Inventors:

• **Palkó, Aliz Zsuzsanna**

2461 Tárnok (HU)

• **Tóth, Attila**

1165 Budapest (HU)

(30) Priority: **31.03.2010 HU 1000080 U**

(71) Applicants:

• **Palkó, Aliz Zsuzsanna**

2461 Tárnok (HU)

(74) Representative: **Kormos, Ágnes**

Váczai út 66. fsz. 3.

HU-1132 Budapest (HU)

(54) **Plastic-walled grave monument**

(57) The subject of this utility model is a plastic-walled grave monument consisting of components (E), a base frame (1) head section (2), lid (3), and accessories (4), constructed so that the wall structure consists of at least one layer (6) of artificial resin (61) and fibreglass

(62), the uppermost cover layer (7) of which is a artificial resin mixture containing a UV-resistant and a fire-resistant material, such that the components (E) are attached to each other.

EP 2 372 048 A2

Description

[0001] The present utility model represents a plastic-walled grave monument (slab and upright marker), fashioned in a manner similar to that seen with conventional monuments, meaning that it may be constructed with an entirely closed lid that may be attached at several points; that the base frame of the monument may be sized variously, as desired; and that structural parts - furnished with flanges used for securing the monument that can be located at several points - can be disposed on the exterior and interior of the structure. In addition, the vault may be filled with earth, where the attached flanges and the weight of the earth lend additional reinforcement. Once the monument has been erected, the exterior flanges may be covered with an aesthetically pleasing material, such as crushed rock.

[0002] Constructed in the conventional manner, grave monuments have thus far been fashioned of stone, preferably artificial stone.

[0003] Grave monuments may be made of limestone, granite, marble, or, in special cases, even of glass. Pieces made of artificial stone or natural limestone are relatively easy to work with, as they can be both carved, and polished, while monuments made of granite, a more precious material, are more difficult to work with, resulting in a greater expenditure of time and money.

[0004] Marble, although identical in composition to limestone, is still more costly when applied to grave monuments. Although the crystals in the structure of marble offer the most pleasing appearance, the surface of a marble monument wears out quickly, and the material loses its shine and/or becomes yellowed with time.

[0005] In all three cases, problems arise, whether specific or shared, including limited life expectancy (structural deterioration), resistance to tooling, possible mineral yellowing, conduciveness to moss growth, fragility, loss of shine, poor resistance to freezing, lengthy tooling times, and maintenance difficulties, in addition to their prohibitively high price range.

[0006] Also, in all three cases, monuments are extremely heavy and difficult to move.

[0007] Stone grave monuments are also time-consuming to erect, requiring several phases of installation. In some cases, construction may even require heavy and other machinery, the use of which represents an additional cost. Though once erected, stone monuments preserve their beauty for some time, after a few years, they begin to collapse and sink under the force of weather and their own weight, becoming hazardous to passers-by. In several cases, including one involving a small child in Hungary in 2009, an individual has died from a falling piece of stone from a grave monument.

[0008] Even when a family manages to save enough under today's economic circumstances to purchase a stone grave monument (possibly taking out a loan), often they cannot afford subsequent restoration work, forcing them to choose solutions they can afford, including un-

usual, temporary solutions (employing wire, metal hardware, wood, bricks, pieces of broken pottery, and other waste materials) that are hazardous to passers-by.

[0009] Utility model CN2775221 describes a tombstone made of mixed materials that includes a tombstone heart and a tombstone shell, where the tombstone shell is made of ceramic, enamel, or hard plastic, and the heart is made of reinforced concrete. Inscriptions and images are arranged on the tombstone in a convenient manner.

[0010] Another solution involving plastic ornamentation, described by patent no. DE 3634422, is placed on the surface of the gravestone and includes personal information, ornamentation, and a memorial inscription placed on a marble or stone grave monument.

[0011] Also serving a protective and decorative function is patent specification US 5864972, describing a gravesite covering system made of flexible plastic that offers protection for gravesites made of stone.

[0012] The disadvantage inherent in all three of these solutions is that they employ plastic solutions only in part: that is, they entail all the disadvantages of conventional solutions, with plastic playing only a protective and/or aesthetic role.

[0013] In devising the present utility model, the objective was to create a plastic-shelled grave monument that serves the same purpose as those made of stone, but that employs a much cheaper construction, hence giving many people the opportunity of knowing that their relatives have been laid to rest under dignified circumstances. Given its low price range, this solution would be affordable even to the lower and middle classes, and given the material of which it is constructed, its structure would be versatile, satisfying a wide range of needs and offering a number of choices to those who purchase it. Also, its multiple windows would allow it to be produced in both fully covered, and earth-filled models.

[0014] Other objectives included a light-weight structure that may be easily assembled and disassembled and that may be set up on site, so that no lengthy preparations would be necessary in seeing that the monument was put in place. As the monument may be constructed in single and double-walled variants, its weight would vary between 20 and 150 kg, ensuring that it may be easily lifted and placed into a grave by 2 to 4 people. The solution would eliminate the need for ad-hoc temporary repairs. Its light-weight structure would prevent it from sinking as the years pass, and thus from presenting a toppling hazard and potential source of accidents.

[0015] A final objective was that the solution be durable, remaining aesthetically pleasing and resistant to deterioration for many years, thus helping the cemetery to maintain a clean, orderly, civilized appearance.

[0016] The present utility model is founded on the realisations that if a grave monument is produced with a wall structure of polyester plastic using appropriate tools and dies, where the constituent elements of the base material are a polyester artificial resin and fibreglass in one layer, such that this layer is then replicated, ensuring

maximum durability and structural integrity;

that if the solution is produced in pieces that can be assembled on-site, making installation a feasible task for two people, the monument economic to manufacture, and the finished product considerably cheaper than solutions made of stone;

that if a material is used that permits the production of a variety of forms and colours, according to available manufacturing technology and tools;

that if the exterior surface is furnished with a UV-resistant coating so that it will stand up well to the forces of weather, remaining aesthetically pleasing for a considerable length of time;

that if the monument is furnished with a fire-resistant coating so that the exterior surface will not be damaged by candles placed on it; then the objectives set for the utility model will have been met.

[0017] Thus, the subject of this utility model is a plastic-walled grave monument, consisting of a number of components, namely, a base frame, a head section, a lid, and accessories, constructed so that the wall structure consists of at least one layer of artificial resin and fibreglass, the uppermost protective layer of which is an artificial resin mixture containing a UV-resistant and/or fire-resistant material, and the components of which are attached to one another.

[0018] In one method of execution of the grave monument according to this utility model, the base frame is furnished with exterior and interior flanges, used to connect the base frame to the ground or landscape fixture in detachable fashion via bolts.

[0019] In another method of execution of the grave monument according to this utility model, the head section is furnished with a flange, used to attach it to the base frame in fixed fashion, preferably via an adhesive.

[0020] In a third method of execution of the grave monument according to this utility model, the lid has a lower fitting part that fits into window openings, preferably rectangular, triangular, or cruciform in shape, in the base frame.

[0021] In a further method of execution of the grave monument according to this utility model, there are one or more accessory plaques, along with one or more drill-holes usable for the placement of vases, on the lid.

[0022] In yet another method of execution of the grave monument according to this utility model, the wall structure has a cover layer mixed from various colorants, additives, and decorative materials.

[0023] The grave monument according to this utility model is described in greater detail via drawings, as per the following:

Figure 1 depicts the manner in which the layers of the wall structure are arranged.

Figure 2 depicts one example of the closed variant of the grave monument.

Figures 3 through 6 depict examples of the grave monument where the monument is open and is partly covered with earth.

Figure 7 is a top view of the base frame.

Figure 8 is a front view of the base frame.

Figure 9 is a front view of the head section.

Figure 10 is a top view of the head section.

[0024] Figure 1 depicts the layers of the wall structure. Visible on the diagram is the arrangement of layers (6), each layer consisting of a layer of artificial resin (61) and above it, a layer of fibreglass (6), with these layers then repeated in order to achieve the appropriate degree of integrity. Specifically, this diagram shows 2 such layers. Above the uppermost fibreglass layer (62) is a cover layer (7), an artificial resin mixture containing a UV resistant and/or a fire-resistant material. Mixed into this cover layer (7) may be various colorants, additives, and/or other decorative materials.

[0025] Visible on Figure 2 is the base frame (1), the central section of which is sealed with a lid (3). The fitting part (31) under the lid (3) fits into the rectangular window opening (31), while the edges of the lid (3) rest on the base frame (1). An accessory (4), a vase (41), is attached to the centre of the lid (3) by bolting or by gluing it into a drill-hole (8).

[0026] Figures 3 through 6 depict variants on the grave monument's base frame constructed with various window openings (31) disposed within the body of the frame (11). In Figure 3, the central section of the base frame (1) includes open windows (31) divided into 3 parts that may be covered with lids (3) as per figure 2 that are fitted to the size of the windows or filled with earth or other covering materials, such as crushed rock, which may be left as decorative in and of themselves, or used as a medium for planting vegetation.

[0027] In Figure 4, the window opening (31) is cruciform in shape, while in Figure 5, it is rectangular. In Figure 6, the upper portion of the base frame (1) is divided into three parts, but in this construction, the area of the rectangles is covered by lids (3), while the area around them is hollow and may be filled with various cover materials, such as earth or rock.

[0028] Visible in Figures 7 and 8 are a top and a front view of the base frame (1). In the diagram, the individual parts of the base frame (1) are clearly visible: proceeding from the outside inward, the exterior flange (51), the body of the frame (11), and the interior flange (52). The exterior flange (51) and interior flange (52) serve to secure the base frame (1) to the ground via covering with earth. Since the exterior flange (51) has been constructed along the entire exterior edge of the base frame (1), when covered with earth, it secures the entire base frame (1) to the ground circumferentially. The body of the frame (11) provides the protruding part of the base frame (1), whose height is 20-50, preferably 30, centimetres. The interior flange (51) is constructed on the interior, lower part of the frame (11) and serves, when the monument is filled

with earth, to secure the entire base frame (1) to the ground from within, so that the entire base frame is secured stably and permanently. As a supplemental step, metallic corner components may be placed in the corners of the exterior flange (51), so that the entire frame (1) may be secured to concrete posts for even greater stability.

[0029] Visible in Figures 9 and 10 are front and top views of the head section (2). The front view according to Figure 9 shows a plaque (42) that offers personal information on the deceased. Both diagrams clearly show the construction of the exterior flange (51), used to secure the head section (2) to the base frame (1) via bolts or adhesives.

[0030] Construction of the grave monument occurs in the following way:

A separating layer is added to a die, over which a cover layer furnished with a fire-resistant, UV-resistant resin coating is laid, which layer is mixed with various colorants or decorative materials, as desired, followed by a layer of fibreglass.

[0031] This layer is repeated several times, as desired: that is, it is followed by another layer of artificial resin, then another of fibreglass, each one is 10-100 mm thick, then another layer of resin. Once these layers have hardened, the piece, whose shape is determined by that of the die, is removed. The individual pieces are attached to each other in removable fashion by bolts, or in irremovable fashion by adhesives, by means of their exterior and interior flanges.

[0032] The lower fitting part of the lid is fit into various window openings - preferably rectangular, triangular, or cruciform in shape - on the base frame, or in another variant, the windows are not covered by a lid, but are merely filled with earth with vegetation planted in them.

[0033] Personal information is inscribed on a plaque constructed of various possible materials, preferably plastic, or directly onto the head section by means of painting, sandblasting, milling, or engraving.

[0034] Accessories, plaques, and vases are secured to various parts of the monument at designated or recessed places via drill holes using bolts or adhesives.

[0035] Advantages of the model may be summarised as follows:

- light-weight structure and thus easy to transport,
- aesthetically pleasing appearance whose material can be coloured, polished, and decorated with any type of motif or colour, even after completion,
- preserves its shape even after a great length of time has passed,
- easy to install and remove,
- involves simple preparatory work,
- form can be easily varied and tooled,
- aesthetic construction that speaks of reverence, for the dead,

- low-priced,
- stands up to the forces of weather,
- washable, easy to clean,
- fire-resistant and corrosion-free,
- easy and inexpensive to repair in the event of damage.

Claims

1. A plastic-walled grave monument consisting of components (E), a base frame (1), head section (2), lid (3), and accessories (4), **characterised by** the wall structure consists of at least one layer (6) of artificial resin (61) and fibreglass (62), the uppermost cover layer (7) of which is a artificial resin mixture containing a UV-resistant and a fire-resistant material, such that the components (E) are attached to each other.
2. The grave monument according to Claim 1, **characterised by** the base frame (1) is furnished with an exterior and interior flange (51-52), used to connect the base frame (1) to the ground or a landscape fixture in detachable fashion, preferably by bolting.
3. The grave monument according to Claim 1 **characterised by** the head section (2) is furnished with an exterior flange (51) used to attach it to the base frame (1) in permanent fashion, preferably by gluing.
4. The grave monument according to any of Claims 1 through 3 **characterised by** the lid (3) has a lower fitting part (31) that can be fitted into rectangular, triangular, or cruciform window openings (32) in the base frame (1).
5. The grave monument according to any of Claims 1 through 4 **characterised by** the head section (2) and lid (3) have one or more drill-holes (8) serving the placement of accessories (4), plaques (42), and/or a number of vases (41).
6. The grave monument according to any of Claims 1 through 5 **characterised by** the wall structure has a cover layer (7) mixed with various colorants, additives, and decorative materials.

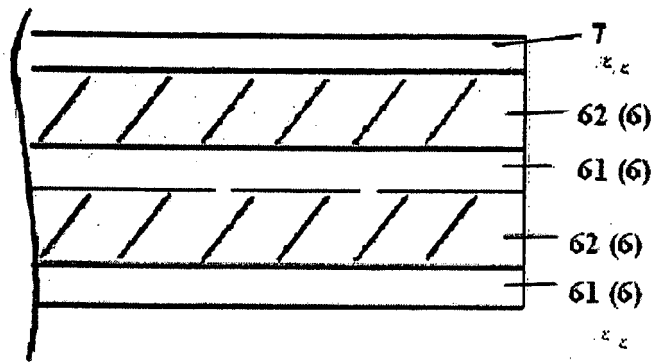


fig.1

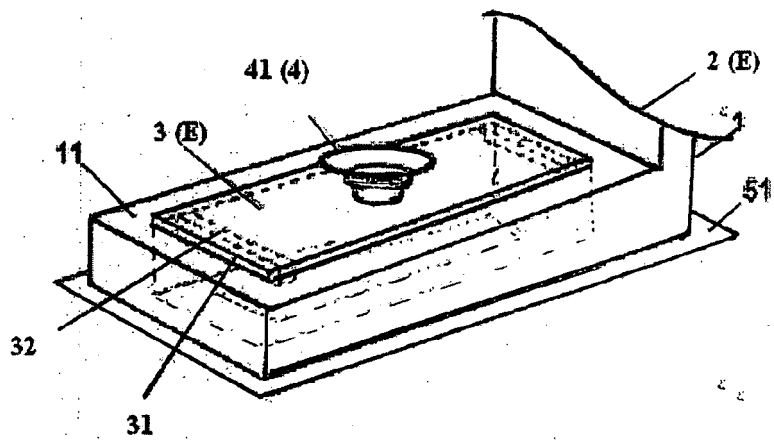


fig.2

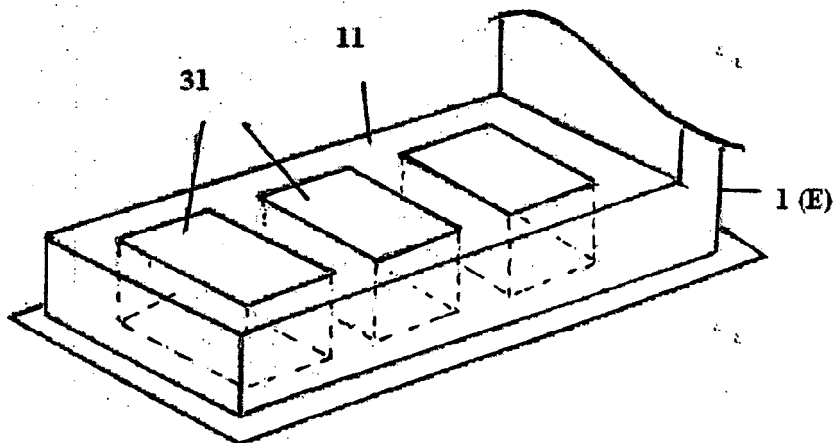


fig.3

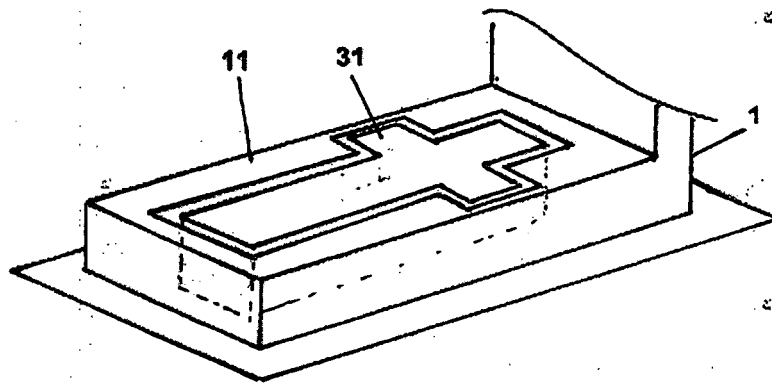


fig.4

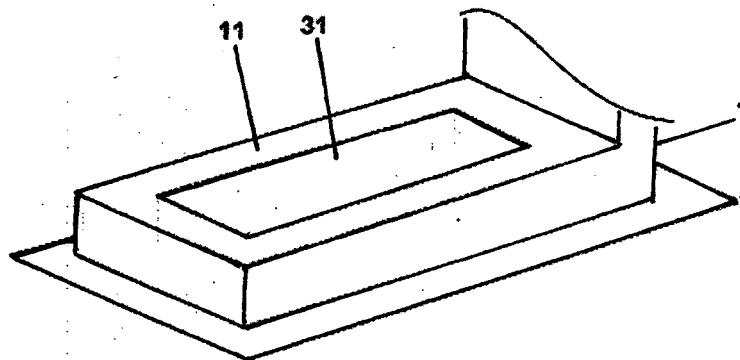


fig.5

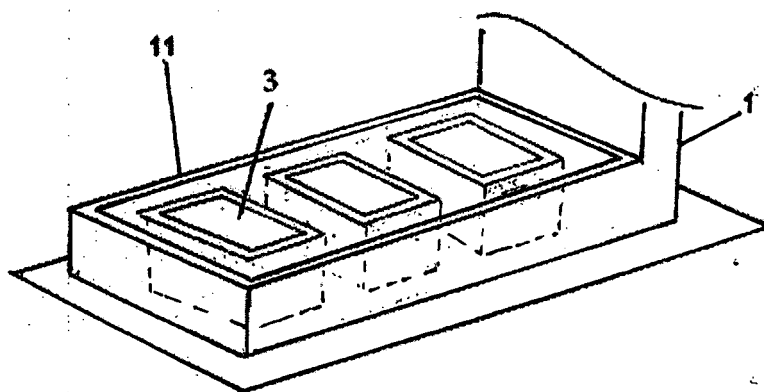


fig.6

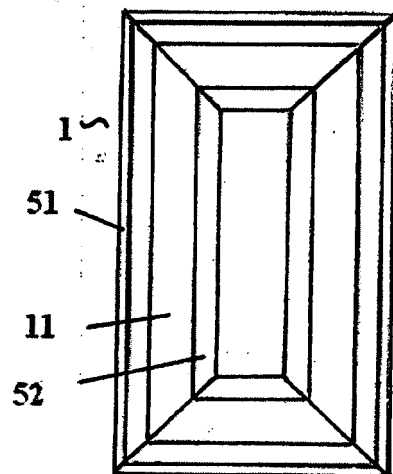


fig. 7

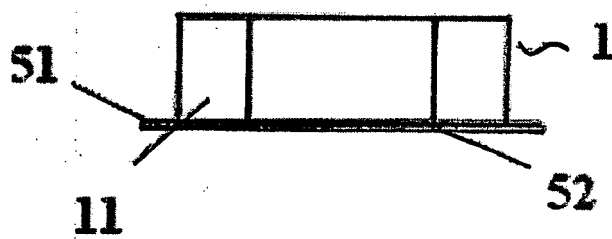


fig. 8

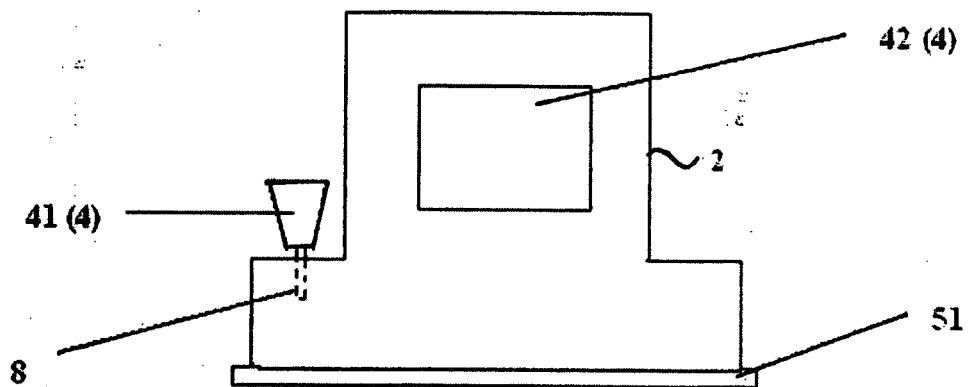


fig.9

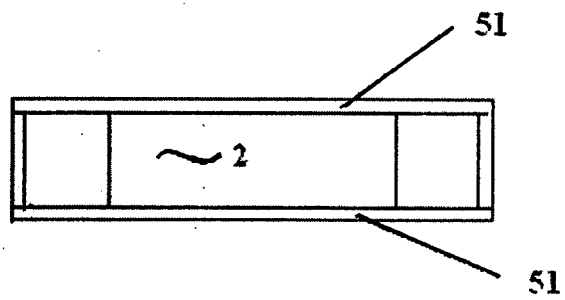


fig.10

LIST OF REFERENCE NUMBERS

E components

1 base frame

11 frame body

2 head section

3 lid

31 fitting part

32 window opening

3 cover layer

4 accessory

41 vase

42 plaque

51 exterior flange

52 interior flange

6 layer

61 resin

62 fibreglass

7 cover layer

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- CN 2775221 [0009]
- DE 3634422 [0010]
- US 5864972 A [0011]