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(54) **ORNAMENTAL MOLDING AND METHOD OF MANUFACTURE**

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(57) **ABSTRACT**

An ornamental molding and method of manufacture have a positive molding (1) made of solidified foam material coated

with predetermined cementitious-like material having a selected ornamental shape and predetermined resistivity to natural destructiveness. A negative molding (6) in which the positive molding is formed also is made preferably from solidified foam material that is coated with a release agent. The solidified foam material is preferred for its light weight, ease of forming and low cost. Additional advantages of the solidified foam material are long life with coating protection for the positive mold and contrastingly easy destruction and discard of the negative mold after being used to make the positive molding. For a wide selection of ornamental moldings, the positive and the negative moldings can be formed together by parting them from a single piece of solidified foam material with a cutting instrument (8) that can include a hot wire, a hot rod, a fluid jet stream or a laser beam. For moldings having compound curvature of interfaces, the positive and the negative moldings can be made from different pieces of solidified foam material that are shaped separately. Designs may be imprinted on the ornamental molding by attaching a layer of material, such as silicone rubber, bearing a design before injecting the cementitious-like material between the positive and negative molds.

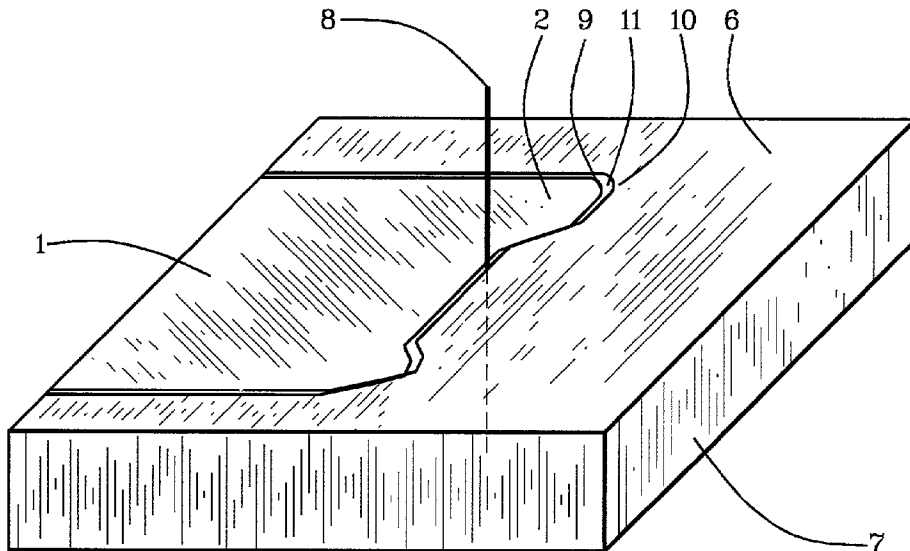


FIG. 1

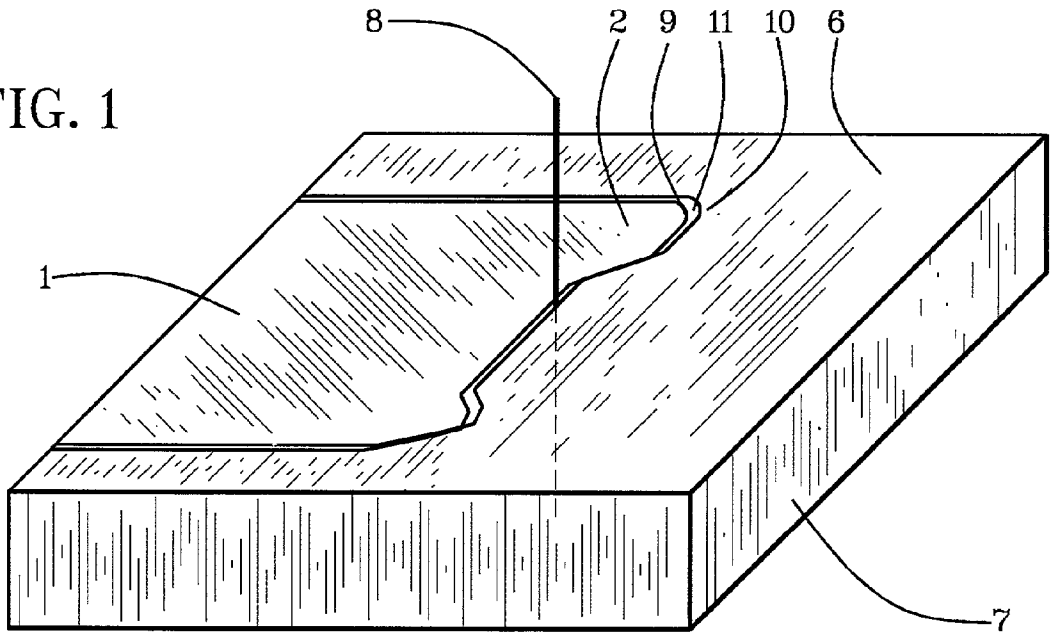


FIG. 2

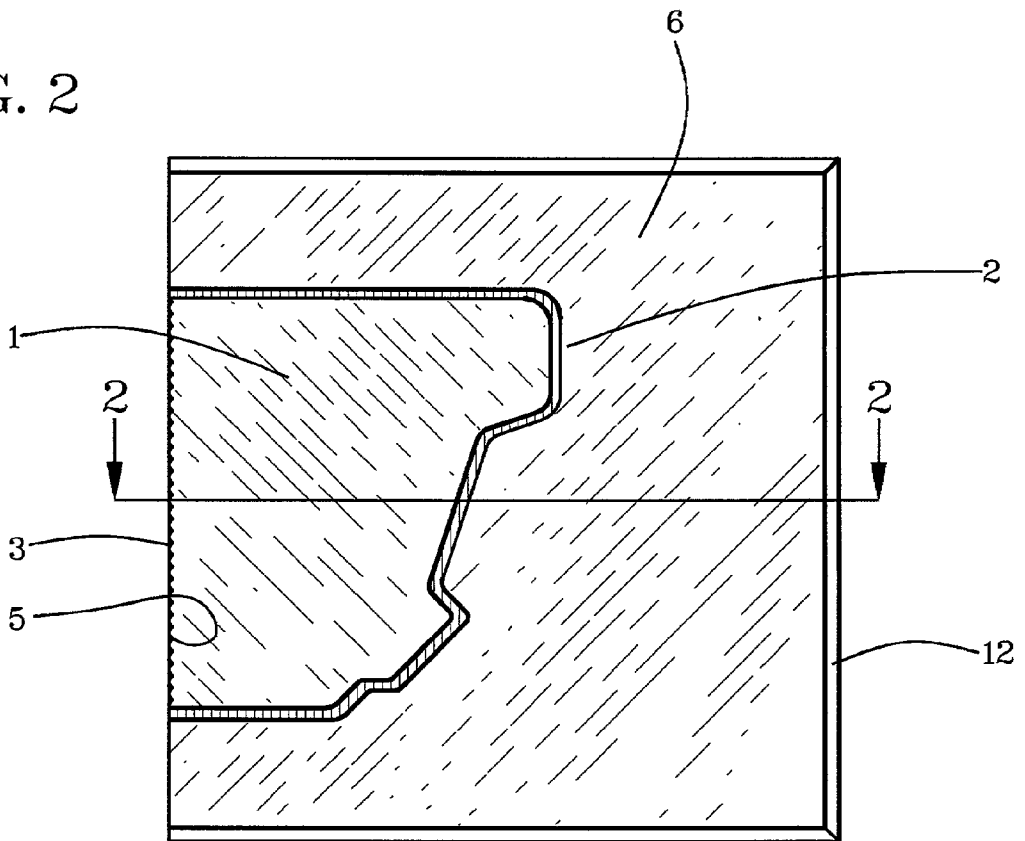


FIG. 3

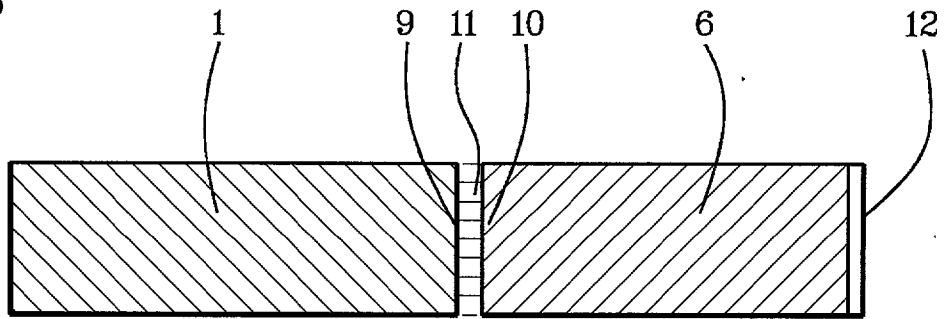
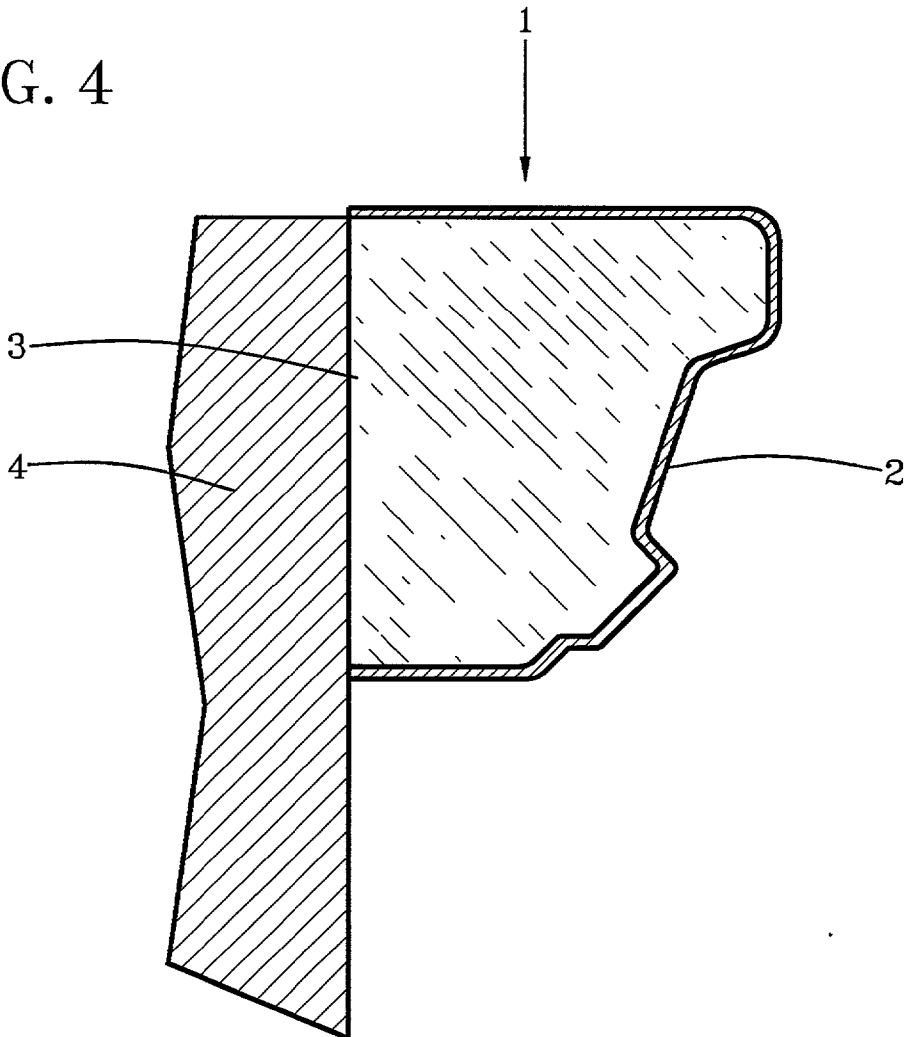


FIG. 4



## ORNAMENTAL MOLDING AND METHOD OF MANUFACTURE

### BACKGROUND OF THE INVENTION

[0001] This invention relates to ornamental molding and its method of manufacture in foam forms with decorative cementitious-like materials for buildings, monuments, pillars, gateways, walls, graves and other structures.

[0002] Natural stone and fabricated stone are heavy and difficult to cut or customize for decorative moldings. When formed, their weight makes them difficult to put in place for ornamental decoration. There is no known lightweight ornamental molding alternative that is strong, durable, inexpensive and controllably decorative in a manner taught by this invention.

[0003] Examples of most-closely related known but different devices are described in the following patent documents:

U.S. Pat. No.	Inventor	Issue Date
5,766,728	Iwaya	Jun. 16, 1998
6,054,080	Sheahan, et al.	Apr. 25, 2000
4,010,232	Labrecque	Mar. 01, 1977
3,856,257	Welstone	Dec. 24, 1974
5,076,928	Blum	Dec. 31, 1991
6,060,006	Savenok	May 09, 2000
4,067,164	McMillan	Jan. 10, 1978
5,672,391	Santarossa	Sep. 30, 1997
5,819,485	Lane, et al.	Oct. 13, 1998

### SUMMARY OF THE INVENTION

[0004] Objects of patentable novelty and utility taught by this invention are to provide ornamental molding which:

- [0005] is quick and easy to make;
- [0006] can be customized readily for a wide selection of structural ornamentation;
- [0007] is lightweight for ease of handling while being made and while being put into ornamental position;
- [0008] can be glued to surfaces reliably when made;
- [0009] is rodent, bird and pest resistant;
- [0010] has widely variable textural, color and surface designing potential; and
- [0011] is long lasting.

[0012] This invention accomplishes these and other objectives with an ornamental molding and method of manufacture having a positive ornamental molding made of solidified foam material coated with predetermined cementitious-like material having a selected ornamental structure and predetermined resistivity to natural destructiveness. A negative molding in which the positive molding is formed also is made preferably from solidified foam material that is coated with a release agent. The solidified foam material is preferred for its light weight, ease of forming and low cost. Additional advantages of the solidified foam material are long life with coating protection for the positive mold and contrastingly easy destruction and discard of the negative

mold. For a wide selection of ornamental moldings having straight-line interfaces, the positive and the negative moldings can be formed together by parting them from a single piece of foamed material with a hot rod, a fluid jet stream or a laser beam. For molding compound curvature of interfaces, the positive and the negative moldings can be made from different pieces of foamed material that are shaped separately. Designs may be imparted to the cementitious-like material by attaching to the negative mold a layer of material, preferably a resilient material such as silicone rubber, bearing a design. The term "cementitious-like" is defined herein to include any material that is liquid in the initial use phase and then cures to a hardened state like cement, including, without limitation, such materials as gypsum, cement, natural stone aggregate, polymer, plaster of paris, cultured marble or any mixture of these materials.

[0013] The above and other objects, features and advantages of the present invention should become even more readily apparent to those skilled in the art upon a reading of the following detailed description in conjunction with the drawings wherein there is shown and described illustrative embodiments of the invention.

### BRIEF DESCRIPTION OF DRAWINGS

[0014] This invention is described by appended claims in relation to description of a preferred embodiment with reference to the following drawings which are explained briefly as follows:

[0015] FIG. 1 is a perspective view of a piece of solidified foam material being cut into a positive molding and a negative molding with a cutting instrument that can include a hot wire, a resistance-heated rod or a laser jet;

[0016] FIG. 2 is a side elevation view of the positive molding positioned in the negative molding with a gap between them for receiving cementitious-like material and with a cap, encasement or other fortification on the negative molding;

[0017] FIG. 3 is a section view through section line 2-2 of FIG. 2; and

[0018] FIG. 4 is the positive molding adhered to an edifice.

### DESCRIPTION OF PREFERRED EMBODIMENT

[0019] Listed numerically below with reference to the drawings are terms used to describe features of this invention. These terms and numbers assigned to them designate the same features throughout this description.

- |     |                                  |
|-----|----------------------------------|
| 1.  | Positive molding                 |
| 2.  | Ornamental molding portion       |
| 3.  | Adhesion portion                 |
| 4.  | Edifice                          |
| 5.  | Surfacing material               |
| 6.  | Negative molding                 |
| 7.  | Base portion                     |
| 8.  | Cutting instrument               |
| 9.  | Ornamental cutting configuration |
| 10. | Forming portion                  |
| 11. | Fill space                       |
| 12. | Fortification                    |

[0020] Referring to the FIGS. 1-4, an ornamental molding includes a positive molding 1 made of solidified foam material having an ornamental molding portion 2 and an adhesional portion 3. The ornamental molding portion 2 has a selected size and shape for ornamenting an edifice 4.

[0021] The adhesional portion 3 includes size and shape for adherence to the edifice 4. As shown in FIG. 2, it can include predetermined porosity for penetration of an adhesive and a surfacing material 5 having predetermined material strength selectively.

[0022] The ornamental molding portion 2 shown in FIG. 4 is coated with predetermined cementitious-like material having a selected coating shape.

[0023] The solidified foam material has predetermined lightness, ease of shaping, rigidity, adherence and adhesive adherence. It also has time durability for use as an ornamental component of the edifice 4 predeterminedly.

[0024] The cementitious-like material has predetermined weather resistance, impact resistance, biological resistance and thickness for the use of the positive molding 1 as an ornamental component of the edifice 4 predeterminedly.

[0025] Optionally, the solidified foam material can include a compound of styrene that can be Styrofoam®.

[0026] Optionally, the cementitious-like material can include a predeterminedly colored ornamental surface.

[0027] A method for manufacturing the ornamental molding starts with providing the solidified foam material for making the positive molding 1 and a material for making a negative molding 6 for receiving the positive molding 1 as predetermined. Also at the start, the cementitious-like material is provided for being affixed to the ornamental molding portion 2.

[0028] The ornamental molding portion 2 and the negative molding 6 are then sized and shaped congruently. Sizing and shaping the adhesional portion 3 of the positive molding 1 and a base portion can be done prior to or after congruent sizing and shaping of the ornamental molding portion 2 and the negative molding 6. The positive molding 1 and the negative molding 6 can then be structurally fortified selectively by appropriate binding, encasement, cap or other fortification 12 to compensate for any inadequacy of material strength of the solidified foam material during the manufacturing process. A forming portion 10 of the negative molding 6 is release-conditioned by application of a release agent or other appropriate means of assuring ease of release of the cementitious-like material on the positive molding 1 after being applied and allowed to set predeterminedly. If a particular design imprint is desired on the ornamental molding portion 2, then a layer of material, such as silicone rubber, with a design on it can be adhered to the forming portion of the negative mold 6 before applying a release agent.

[0029] The cementitious-like material is then positionally applied to the ornamental molding portion 2 of the positive molding 1 with the cementitious-like material being placed intermediate the ornamental molding portion 2 of the positive molding 1 and the negative molding 6. The cementitious-like material is allowed to set and then the positive molding 1 is removed from the negative molding 6.

[0030] The adhesional portion 3 of the positive molding 1 is then attached to the edifice 4 by adhesive, nails, screws or other fasteners.

[0031] The sizing and shaping of the ornamental molding portion 2 of the positive molding 1 and a forming portion 10 of the negative molding 6 can include cutting them from a single piece of solidified foam material with a cutting instrument 8 for producing the ornamental molding portion 2 on a first side and the forming portion 10 on a second side of a predetermined ornamental cutting configuration 9. The cutting instrument 8 shown in FIG. 1 is representative of a heated wire, a heated rod, a fluid stream or a laser beam.

[0032] A fill space 11 is bounded by a molding wall of the ornamental molding portion 2 on the first side of the ornamental cutting configuration 9 and by a forming wall of the forming portion 10 that is oppositely disposed on the second side of the ornamental cutting configuration 9 as shown in FIGS. 1 and 3.

[0033] The cutting instrument 8 can include a cutting thickness for leaving a predetermined distance of separation between the molding wall and the forming wall for containing the cementitious-like material to form the ornamental molding portion 2 of the positive molding 1. For this, the cutting instrument 8 can include a cutting wire having predetermined heat and thickness for heat-disintegrating the solidified foam material intermediate the molding wall and the forming wall by passage of the cutting wire congruently with the ornamental cutting configuration 9.

[0034] The cutting instrument 8 can include a cutting wire having predetermined heat and thickness for heat-disintegrating the solidified foam material intermediate the molding wall and the forming wall by passage of the cutting wire congruently with the cutting configuration 10.

[0035] The cutting instrument 8 can include a resistance-heated rod having is predetermined heat and thickness for heat-disintegrating the solidified foam material intermediate the molding wall and the forming wall by passage of the resistance-heated rod congruently with the ornamental cutting configuration 9.

[0036] The cutting instrument 8 can include a fluid stream having predetermined mass, flow speed and thickness for fluid-disintegrating the solidified foam material intermediate the molding wall and the forming wall by passage of the fluid stream congruently with the ornamental cutting configuration 9.

[0037] The cutting instrument 8 can include a laser beam having predetermined dimensions for laser-disintegrating the solidified foam material intermediate the molding wall and the forming wall by passage of the laser beam congruently with the ornamental cutting configuration 9.

[0038] The sizing and shaping of the ornamental molding portion 2 of the positive molding 1 and the forming portion 10 of the negative molding 6 can include structuring them separately from separate pieces of material having the ornamental cutting configuration 9 being bounded by the molding wall of the ornamental molding portion 2 on the first side of the ornamental cutting configuration 9 and by a forming wall of the forming portion 10 that is oppositely disposed on the second side of the ornamental cutting configuration 9.

[0039] The positionally applying of the cementitious-like material to the ornamental molding portion 2 of the positive molding 1 can include removal of gaseous bubbles from the cementitious-like material. The removal of the gaseous bubbles can be by vibrating the positive molding 1 and the negative molding 6 prior to allowing the cementitious-like material to set.

[0040] A new and useful ornamental molding and method of manufacture having been described, all such foreseeable modifications, adaptations, substitutions of equivalents, mathematical possibilities of combinations of parts, pluralities of parts, applications and forms thereof as described by the following claims and not precluded by prior art are included in this invention.

What is claimed is:

1. An ornamental molding comprising;
  - a positive molding made of solidified foam material;
  - the positive molding having an ornamental molding portion and an adhesional portion;
  - the ornamental molding portion having a selected ornamental size and shape for ornamenting an edifice predeterminedly;
  - the adhesional portion having a selected adhesional size and shape for adherence of the adhesional portion of the positive molding to the edifice;
  - the ornamental molding portion being coated with predetermined cementitious-like material having a selected coating shape;
  - the solidified foam material having predetermined lightness, ease of shaping, rigidity, material adherence and adhesive adherence;
  - the solidified foam material that is coated with the cementitious-like material having time durability for use as an ornamental component of the edifice predeterminedly;
  - the cementitious-like material having predetermined weather resistance, impact resistance, biological resistance and thickness for the use of the positive molding as an ornamental component of the edifice predeterminedly.
2. The ornamental molding of claim 1 wherein:
  - the solidified foam material includes a compound of styrene.
3. The ornamental molding of claim 1 wherein:
  - the solidified foam material includes polyurethane.
4. The ornamental molding of claim 1 wherein:
  - the cementitious-like material includes predeterminedly fine sand.
5. The ornamental molding of claim 1 wherein:
  - the cementitious-like material includes predeterminedly colored stone.
6. The ornamental molding of claim 1 wherein:
  - the cementitious-like material includes predeterminedly sized stone.
7. The ornamental molding of claim 1 wherein:
  - the cementitious-like material includes pieces of predeterminedly shaped stone.
8. The ornamental molding of claim 1 wherein:
  - the cementitious-like material includes predeterminedly sized, shaped and colored stone substitute.
9. The ornamental molding of claim 1 wherein:
  - the cementitious-like material includes predeterminedly gypsum.
10. The ornamental molding of claim 1 wherein:
  - the cementitious-like material includes predeterminedly a polymer.
11. The ornamental molding of claim 1 wherein:
  - the cementitious-like material includes a predeterminedly smooth ornamental surface.
12. The ornamental molding of claim 1 wherein:
  - the cementitious-like material includes a predeterminedly colored ornamental surface.
13. The ornamental molding of claim 1 wherein:
  - the cementitious-like material includes a predeterminedly shaped ornamental surface.
14. The ornamental molding of claim 1 wherein:
  - the adhesional portion of the positive molding includes predetermined porosity for penetration of an adhesive predeterminedly.
15. The ornamental molding of claim 1 wherein:
  - the adhesional portion of the positive molding includes a surfacing material having predetermined material strength.
16. A method comprising the following steps for manufacturing the ornamental molding:
  - providing the solidified foam material for making the positive molding predeterminedly;
  - providing material for making the negative molding for receiving the positive molding predeterminedly;
  - providing the cementitious-like material for being affixed to the ornamental portion of the positive molding predeterminedly;
  - sizing and shaping the ornamental molding portion of the positive molding and a forming portion of the negative molding congruently;
  - sizing and shaping the adhesional portion of the positive molding and a base portion of the negative molding selectively;
  - structurally fortifying the negative molding selectively;
  - release-conditioning the forming portion of the negative molding;
  - positionally applying the cementitious-like material to the ornamental molding portion of the positive molding with the cementitious-like material being placed intermediate the ornamental molding portion of the positive molding and the forming portion of the negative molding;
  - allowing the cementitious-like material to set on the positive molding; and

removing the positive molding from the negative molding.

**17.** The method of claim 16 and further comprising:

adhering the adhesional portion of the positive molding to the edifice.

**18.** The method of claim 16 wherein:

the sizing and shaping of the ornamental molding portion of the positive molding and the forming portion of the negative molding include cutting them from a single piece of solidified foam material with a cutting instrument for producing the ornamental molding portion on a first side and the forming portion on a second side of a predetermined ornamental cutting configuration; and

the ornamental cutting configuration being bounded by a molding wall of the ornamental molding portion on the first side of the ornamental cutting configuration and by a forming wall of the forming portion that is oppositely disposed on the second side of the ornamental cutting configuration.

**19.** The method of claim 18 wherein:

the cutting instrument includes a cutting thickness for leaving a predetermined distance of separation between the molding wall and the forming wall for containing the cementitious-like material to form the ornamental molding portion of the positive molding.

**20.** The method of claim 19 wherein:

the cutting instrument includes a cutting wire having predetermined heat and thickness for heat-disintegrating the solidified foam material intermediate the molding wall and the forming wall by passage of the cutting wire congruously with the cutting configuration.

**21.** The method of claim 19 wherein:

the cutting instrument includes a resistance-heated rod having predetermined heat and thickness for heat-disintegrating the solidified foam material intermediate the molding wall and the forming wall by passage of the resistance-heated rod congruously with the cutting configuration.

**22.** The method of claim 19 wherein:

the cutting instrument includes a fluid stream having predetermined mass, flow speed and thickness for fluid-disintegrating the solidified foam material intermediate the molding wall and the forming wall by passage of the fluid stream congruously with the cutting configuration.

**23.** The method of claim 19 wherein:

the cutting instrument includes a laser beam having predetermined dimensions for laser-disintegrating the solidified foam material intermediate the molding wall and the forming wall by passage of the laser beam congruously with the cutting configuration.

**24.** The method of claim 16 wherein:

the sizing and shaping of the ornamental molding portion of the positive molding and the forming portion of the negative molding include structuring them separately from separate pieces of material having the ornamental cutting configuration being bounded by the molding wall of the ornamental molding portion on the first side of the ornamental cutting configuration and by a forming wall of the forming portion that is oppositely disposed on the second side of the ornamental cutting configuration.

**25.** The method of claim 16 wherein:

the positionally applying of the cementitious-like material to the ornamental molding portion of the positive molding includes removal of gaseous bubbles from the cementitious-like material.

**26.** The method of claim 25 wherein:

the removal of the gaseous bubbles includes vibrating the positive molding and the negative molding prior to allowing the cementitious-like material to set.

**27.** The method of claim 16 wherein sizing and shaping the ornamental molding portion of the positive molding and a forming portion of the negative molding further comprises attaching a layer of material bearing a design imprint to the forming portion of the negative molding.

**28.** The method of claim 27 wherein the material with the design imprint includes a polymer.

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