

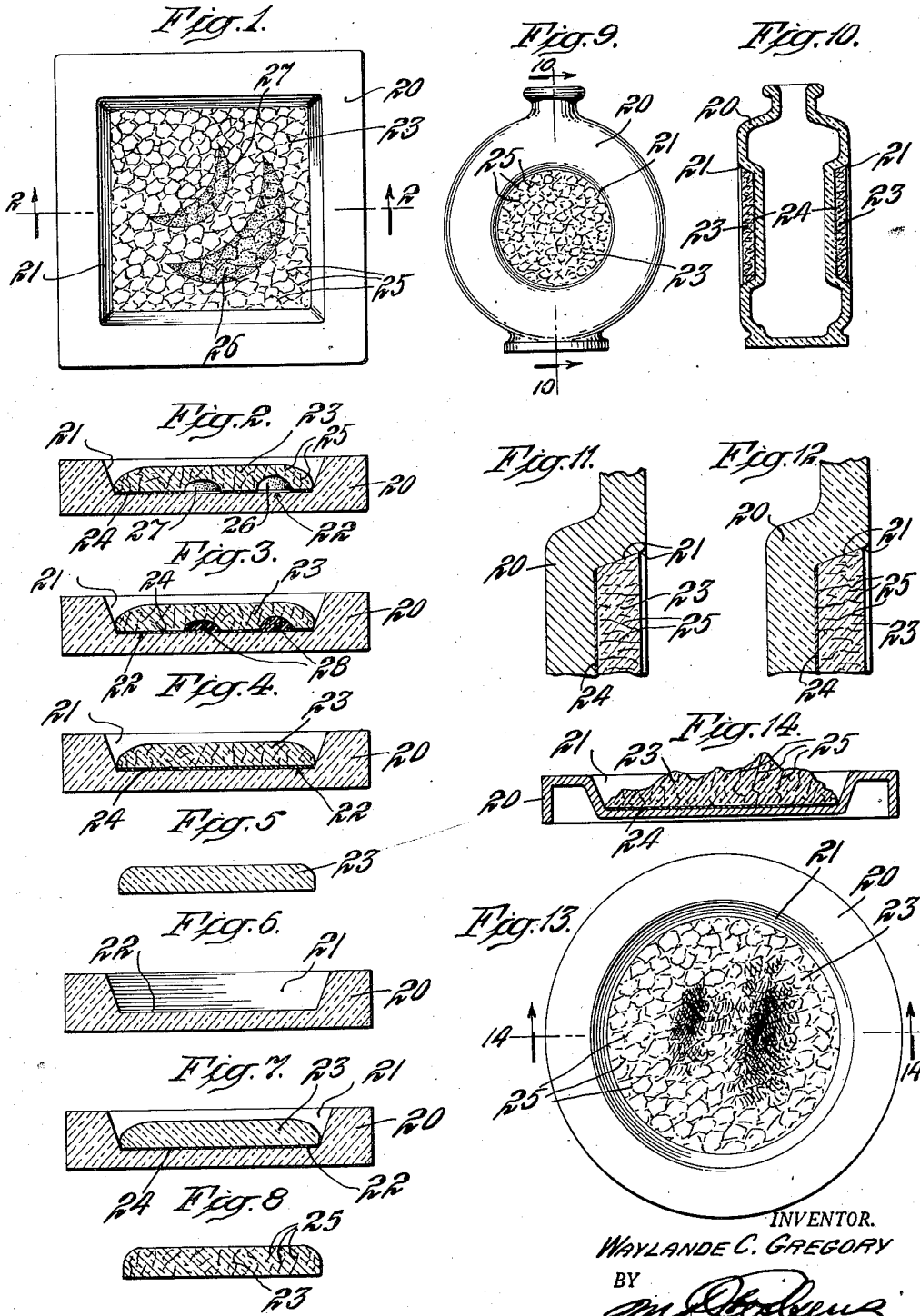
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COMPOSITE DECORATIVE UNIT

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## COMPOSITE DECORATIVE UNIT

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17 Claims. (Cl. 41-34)

1

This invention relates to composite articles, and in particular to such articles embodying areas or portions of glass, of suitable color or colors, provided with internal fractures forming light reflecting facets or surfaces which impart to the aforesaid areas or portions live, gem-like or jewel-like properties of great decorative, artistic and aesthetic value.

It is the object of this invention to provide new and improved articles of the class described above wherein the internally fractured glass areas or portions are formed separately as units, attachable permanently to objects and articles of widely varying types.

It is a further object of this invention to provide such a new and improved decorative unit particularly adapted for attachment with ease and convenience to such articles.

It is a further object of this invention to provide new and improved methods of making such decorative units and such composite articles embodying the aforesaid units.

This application is a continuation-in-part of my copending application Serial No. 426,584, filed January 13, 1942, which matured into U. S. Letters Patent No. 2,357,399, granted September 5, 1944.

These and other objects and advantages of this invention will clearly appear from the following description taken with the accompanying drawing and the appended claims.

In the drawing:

Fig. 1 is a plan view of a composite article comprising an ornamental tile illustrative of the principles of this invention;

Fig. 2 is a section taken substantially on the line 2-2 of Fig. 1;

Fig. 3 is a view similar to Fig. 2, but illustrating a variation of the embodiment of Figs. 1 and 2 wherein the recesses forming the design symbols are filled with suitable material;

Fig. 4 is a view similar to Figs. 2 and 3, but with the design symbols or elements omitted;

Fig. 5 is a view similar to Figs. 2, 3 and 4, but illustrating, in section, the crystal forming element prior to its attachment to the base or base member;

Fig. 6 is a view similar to Fig. 5, but illustrating the base or base member before the attachment of the crystal forming element of Fig. 5 thereto;

2

Fig. 7 is a view similar to Figs. 2, 3 and 4, and showing the members of Figs. 5 and 6 attached, but before the crystals are formed;

Fig. 8 is a view similar to Fig. 5, but showing the crystal forming element with crystals formed therein prior to its attachment to the base or base member;

Fig. 9 is a view in elevation showing the application of the principles of this invention to a vessel, such as a flask or bottle;

Fig. 10 is a section taken substantially on the line 10-10 of Fig. 9;

Fig. 11 is an enlarged fragmentary detail, in section, of a modification of the structure shown in Fig. 10 wherein the body of the vessel is formed of metal;

Fig. 12 is a view similar to Fig. 11, but illustrating a modification wherein the vessel is formed of glass;

Fig. 13 is a plan view illustrating the application of the principles of this invention to a metal plate or disk to form a decorative structure; and Fig. 14 is a section taken substantially on the line 14-14 of Fig. 13.

In my aforesaid Patent No. 2,357,399 disclosure is made of composite articles constructed of glass and ceramic material bonded by fusing of the glass, wherein the glass is provided with internal fractures forming light reflecting facets imparting great beauty and aesthetic appeal to the articles by reason of the simulation, by the glass, of sheets of gems or jewels. Methods of manufacturing such articles are also described and claimed therein.

This invention herein disclosed extends the principles of the invention described and claimed in the aforesaid application to other widely varying articles and uses and provides methods for accomplishing the aforesaid extension as hereinafter set forth in detail.

In the embodiment shown in Figs. 1 and 2, the composite article illustrative of this invention comprises a base or backing member 20 in the form of a ceramic tile provided with a recess 21 having inclined side walls and forming a recess in which a decorative member or element is secured as hereinafter described.

Attached to the lower wall, or bottom 22, of this recess 21 is a decorative element 23. This element comprises a sheet or block of glass mate-

rial, substantially thicker than a glaze, secured to the bottom surface 22, by means of a layer or layers of suitable thermosetting cement or adhesive 24. This cement or adhesive may be applied in fluid form either to the surface of the element 23 or to the surface of the base 20, or it may comprise a thin sheet of thermosetting resinous composition. The decorative element 23 is provided with haphazardly arranged internal fractures 25 forming light reflecting facets, and imparting to the element, sheet, or block 23 a gem-like or jewel-like quality. Cast within the element 23, or etched into the bottom or inner surface thereof, are suitable decorative symbols such as the crescents 26 and 27 which are formed therein prior to attachment of the element 23 to the base 20.

The internal fractures may be provided in the element 23 before its attachment to the base 20, but it is preferred, as hereinafter more fully explained, to attach the element 23 to the base 20, subject them to suitable elevated temperature, and then subject the element 23 by cooling at a suitable rate to cause thermal shock sufficient to form the internal fractures 25 therein. The surface of the recesses forming elements or symbols 26 and 27 may be treated in any suitable manner, for instance, by stippling or frosting resulting from sand blasting or they may be filled by suitable material 28, as shown in Fig. 3. The elements or symbols 26, 27 are merely illustrative since other symbols and design elements may be applied to the element 23 such as facet simulating textures, embossings and/or metal or other surfacings providing a mirror or other decorative finish to the rear or lower surface of the element 23 or partial areas thereof.

As shown in Fig. 4, the symbols 26 and 27 may be omitted from the decorative element 23, if desired.

In making a composite article such as that illustrated in Figs. 1 and 2, the decorative element 23 is formed independently of, and separate from, the base member 20, which is shown in Fig. 6. A sheet or coating 24, of suitable cement or adhesive as described above is then applied to the bottom surface 22 of the recess 21, and/or to the rear or lower surface of the element 23 and the element 23 is attached to the surface 22 by pressure and/or heat to form the assembly shown in Fig. 7. Thereafter, by subjecting the assembly shown in Fig. 7 to elevated temperature followed by the application of thermal shock to the element 23, the internal light reflecting facet-forming fractures may be formed in the element 23 to produce the article shown in section in Fig. 4.

If it is desired to provide the article with design symbols, such as 26 and 27 (Figs. 1 and 2), these elements are formed as recesses in the glass material of the element 23 prior to its attachment to the base. If desired, suitable metallic or other material 28 may be applied to the recesses prior to their attachment (Fig. 3). Optionally, flakes or other fine metallic particles or the like may be suspended in the material of the element 23.

As shown in Figs. 9 and 10, a bottle, flask, or other container may be provided with decoration preferably by forming recesses 21 at opposite sides thereof, whereby the base 20 is formed by walls thereof. Into these recesses 21, elements 23 are applied in the above described manner, and as shown in Figs. 9 and 10, whereupon the complete article is subjected to elevated temperature and

the element 23 provided with internal fractures 25 as described above.

As shown in Fig. 11, the walls of the vessel may be formed of metal, or as shown in Fig. 12, it may be formed of any suitable type of glass or other material to which the elements 23 may be adhesively attached in the manner described.

As shown in Figs. 13 and 14, the base may be in the form of a metal stamping or disk optionally provided with a recess 21 to which the decorative element 23 is applied as above described. In such case, the thickness of the element 23 may be greater than the depth of the recess 21.

Where such a composite article, as is described above, is to be used as an ash tray or the like, the distance between the top surface of the element 23 and the top of the recess 21 will be substantial, in order to provide space for the collection of cigarette ashes or the like.

The elements 23 may be cast, molded or otherwise formed in the manner which is conventional in the glass making art and the internal fractures formed therein by inducing internal strains therein during cooling or after reheating upon re-cooling. These strains may be induced by quenching the entire element 23 in a suitable coolant or by localized application of a cooling medium. Thereafter the layer or sheet of cement or adhesive 24 may be applied thereto to form a unit comprising a relatively thick glass member of suitable color or colors provided with internal crystal-forming light reflecting facets defined by the internal fractures 25 therein and having its back or bonding surface provided with a cement or adhesive layer, preferably thermosetting and uncured, whereby the unit may be heated and pressed upon any desired article, base or backing.

As pointed out above, and as illustrated in Figs. 5, 6 and 7 respectively, the element 23 may be cast or molded, as described above and then provided with a layer or sheet 24 of adhesive, without formation of the internal fractures 25 therein to form the units. In such case the heating of the assembly 23, 24, 25 to set the cement or adhesive 24 may be followed by quick cooling of the entire unit, where the nature of the base 20 permits, or localized cooling of the element 23 to cause the formation of the internal facet forming fractures therein.

Thus the provision of the light reflecting facet forming fractures in the glass element 23 may occur before or after attachment to a base or support. The unit attachable to a suitable base to form the composite articles herein described may thus comprise such a glass sheet, block or element, with or without such internal fractures, but provided with a suitable layer or coating of cement or adhesive, preferably thermosetting. As also pointed out above, flakes or other light reflecting particles of metal, refractory or like materials may optionally be suspended in the material of the element 23. While glass is the preferred material for this element, where such particles are thus suspended in the material, other clear materials such as known non-metallic resinous plastic materials may be used and may be attached by use of solvents, in some cases, which soften the material making the use of separate adhesives unnecessary.

Having thus fully described my invention it will clearly appear that I have provided a new and improved decorative unit readily attachable to bases, backings and objects of widely varying types which unit may be readily and conveniently

5

attached permanently thereto and which unit may be cheaply and conveniently produced.

It is, of course, to be understood that the above description is merely illustrative and in nowise limiting and that I desire to comprehend within this invention such modifications as are included within the scope of the appended claims.

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

1. In a composite article of the class described, a base member, a glass member substantially thicker than a glaze and provided with internal fractures forming individually perceptible light reflecting crystal defining facets imparting a jewel-like quality thereto, and a bonding agent between said base member and said glass member and firmly bonding them together.

2. The structure defined in claim 1, said base member being formed of ceramic material.

3. The structure defined in claim 1, said base member being formed of metal.

4. The structure defined in claim 1, said base member being formed of glass contrasting with said internally fractured glass member.

5. In a composite article of the class described, a base member, a glass member having internal individually perceptible light reflecting facets with at least one design element formed in the rear surface thereof, and a layer of bonding material on said rear surface and disposed between said base member and said glass member for firmly bonding them together.

6. In a composite article of the class described, a base member, a glass member substantially thicker than a glaze and provided with internal fractures forming light reflecting crystal defining facets imparting a jewel-like quality thereto, the rear surface of said glass member being provided with ornamentation, and a thermosetting bonding agent between said base member and the rear surface of said glass member and firmly bonding them together.

7. As a new article of manufacture for use as a decorative unit attachable to suitable base members, a moulded body of suitably colored clear material, substantially thicker than a glaze and provided internally with means having internal fractures forming individually perceptible light reflecting facets haphazardly arranged therein, said body having a bonding surface attachable to said base members, and a coating of thermosetting bonding material on said bonding surface for attaching it to said base members.

8. As a new article of manufacture for use as a decorative unit attachable to suitable base members, a molded body of colored clear material, substantially thicker than a glaze and provided with means having internal fractures forming light reflecting facets haphazardly arranged therein, said body having a bonding surface attachable to said base member.

9. As a new article of manufacture for use as a decorative unit attachable to suitable base members, a molded body of colored clear material, substantially thicker than a glaze and provided with internal fractures provided forming light reflecting facets internally therein, said body having a bonding surface attachable to said base member, and a layer of thermosetting bonding material on said bonding surface.

10. In a composite article of the class described, a base member, a glass member, substantially thicker than a glaze and provided with internal fractures forming individually perceptible light

6

reflecting crystal defining facets imparting a jewel-like quality thereto and with a design element formed at the rear surface thereof, and a layer of bonding material between said base member and the rear surface of said glass member firmly bonding them together.

11. The structure defined in claim 10, said design element in said glass member being filled with decorative material.

12. In a method of forming a composite article embodying a decorative glass body, providing a base member with a bonding surface, forming a glass body substantially thicker than a glaze with a bonding surface complementary with a portion at least of the bonding surface of said base member, adhesively attaching said bonding surfaces together, and inducing fracture forming stresses in said glass body to produce fractures therein forming light reflecting facets imparting to said glass body a gem-like quality.

13. In a method of forming a composite article embodying a decorative glass body substantially thicker than a glaze, providing a base member with a bonding surface, forming a glass body having a bonding surface complementary with a portion at least of the bonding surface of said base member, and adhesively attaching said bonding surfaces together, said glass body being provided with individually perceptible internal light reflecting facet forming fractures imparting to said glass body a jewel-like quality.

14. In a method of forming a composite article embodying a decorative glass body substantially thicker than a glaze, providing a base member with a bonding surface of predetermined shape and extent, independently forming a glass body having a bonding surface complementary with a portion at least of the bonding surface of said base member, adhesively attaching said bonding surfaces together, and inducing fracture forming stresses in said glass body by localized thermal shock to produce individually perceptible crystal defining fractures therein forming light reflecting facets imparting to said glass body a crystalline jewel-like quality.

15. In a method of forming a composite article embodying a decorative glass body substantially thicker than a glaze, providing a base member with a bonding surface, independently forming a glass body having a bonding surface complementary with a portion at least of the bonding surface of said base member, providing a layer of uncured thermosetting cement on the bonding surface of said glass body, placing said base member and said glass body together with said layer on the bonding surface engaging the bonding surface of said base member, and applying sufficient heat and pressure to bond said member and said body permanently together, said glass body being provided with internal individually perceptible crystal defining light reflecting facet forming fractures haphazardly arranged therein and imparting to said glass body a crystalline and jewel-like quality.

16. In a method of forming a composite article embodying a decorative glass body substantially thicker than a glaze, providing a base member with a bonding surface, independently forming a glass body with a bonding surface complementary with a portion at least of said first named bonding surface, providing an uncured thermosetting adhesive coat on the bonding surface of said glass body, engaging said adhesive coat with the bonding surface of said base member, heating said base member, said coat, and said glass

7

body to cure said thermosetting coat and bond said base member and glass body firmly together, then cooling said base member and glass body concurrently at such rate as to induce in said glass body strains causing formation therein of light reflecting facet forming fractures imparting a jewel-like quality to said glass body.

17. As a new article of manufacture, a glass body provided with an under surface, a coating of thermosetting bonding material on said under surface, said glass body being provided with internal fractures forming individually perceptible light reflecting and crystal defining facets imparting to said glass body a crystalline gem-like quality, a supporting body, and said glass body being permanently attached to said supporting body by said bonding material.

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8

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