

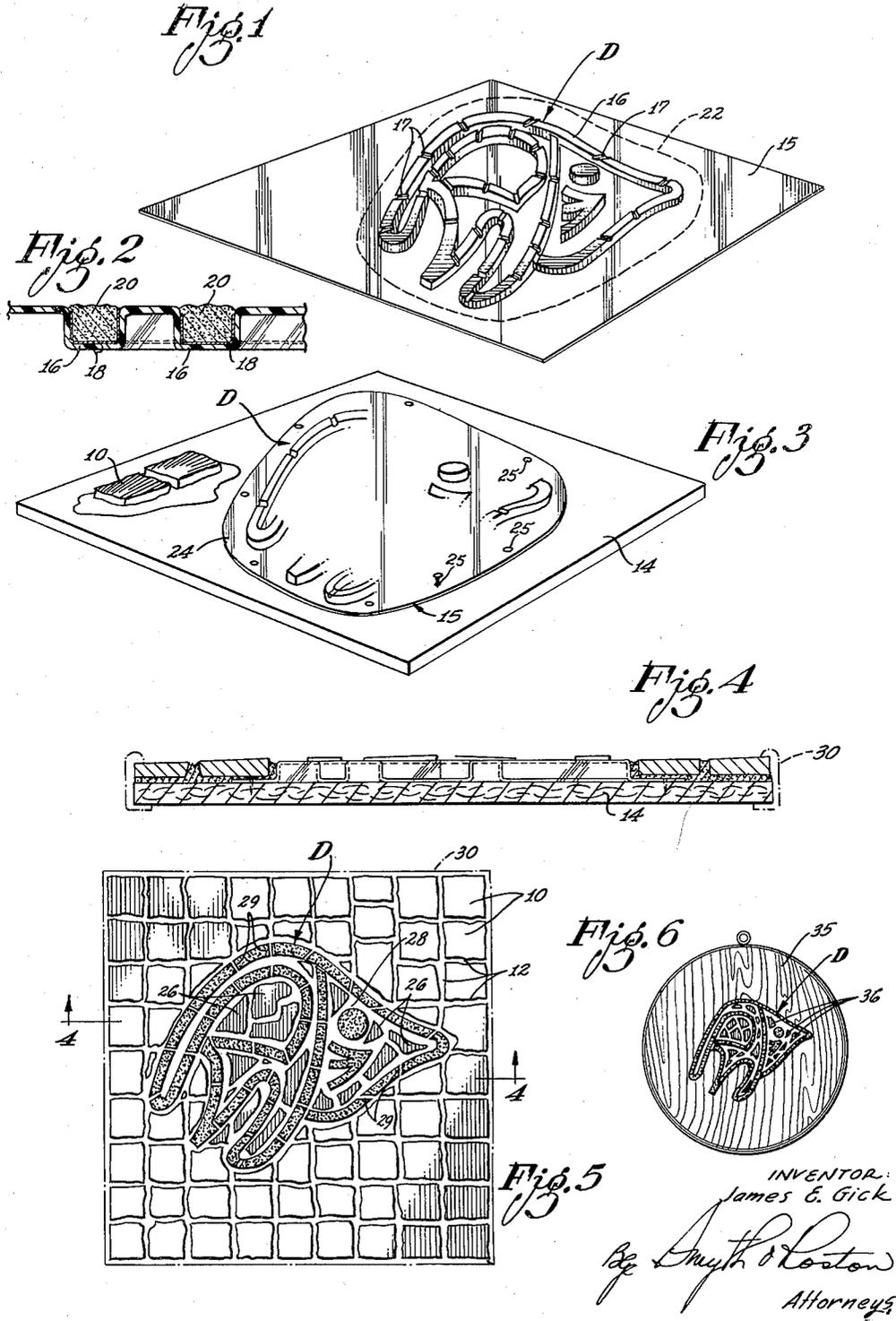
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ORNAMENTAL TILE AND METHOD OF FABRICATION

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ORNAMENTAL TILE AND METHOD OF FABRICATION

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6 Claims. (Cl. 41—23)

This invention relates to decorative tiles, applique designs and the like and more particularly pertains to a panel having a design in relief with associated mosaic areas.

In the conventional construction of a tile panel having a relief design with a mosaic background, for example, the relief design is incorporated in one or more ceramic plaques much larger than the individual mosaic bodies, and the plaque or plaques are cemented to a base member along with the mosaic background bodies. Such a construction is relatively expensive for a number of reasons.

One reason is that the molding and the firing of such ceramic plaques requires several operations and repeated handling. Another reason is that a decorative plaque of quality more often than not has contrasting lines or areas that must be separately colored. Another reason is that the inevitable rejects increase the cost.

The present invention eliminates these cost factors to result in an economical inlaid plaque of high decorative quality. The invention further makes it possible to incorporate inlaid mosaic in the area of the relief design as well as in the background area. Such incorporation in the relief design of a ceramic plaque to obtain the same effect would be expensive.

The purpose of the invention is accomplished by using a sheet of suitable plastic material for the relief design and by off-setting portions of the sheet from the plane of the sheet in accord with the desired relief pattern. Among the plastic materials that are suitable for this purpose are various synthetic resins, including acetates and vinyls.

In a simple practice of the invention, a translucent or opaque thermoplastic sheet is formed by a well-known vacuum molding procedure into the desired off-set configuration and the formed sheet is then bonded directly to the base member of the mosaic panel to provide the desired relief design. The relief elements of the design are hollow, but have the appearance of solid elements.

In the preferred practice of the invention for the fabrication of a mosaic panel, a substantially transparent plastic sheet is molded to the off-set configuration and then the inner surfaces of the off-set portions are coated with opaque paint of a selected color or selected colors. One important advantage of this procedure is that a transparent sheet of a plastic material such as an acetate or vinyl that is painted on its outer surface has just the luster that characterizes a high quality fired ceramic tile. Another important advantage is that only one type of sheet need be molded and stocked for all desired colors, since a transparent sheet may be finished in any desired color. Because of this advantage, the molded transparent sheets themselves may be sold as articles of manufacture for use by fabricators of mosaic tiles.

A further feature of the preferred practice of the invention is the concept of filling the hollow design elements of the molded sheet with a suitable material to convert the hollow relief elements into solid relief elements that have the characteristic rigidity of fired ceramic. For

this purpose, a suitable cementitious material may be employed and a suitable adhesive may be used to insure adherence of the cementitious material to the inner surface of the molded plastic sheet.

In the preferred practice of the invention for the production of a design with a mosaic background, the molded sheet is trimmed in preparation for applying the sheet to the base member, the sheet being trimmed to leave a flat margin along the design. The off-set portions of the trimmed sheet may be painted or unpainted from the inside and may be backed up or not by cementitious material. The trimmed sheet is then bonded to the base member and a suitable adhesive may be used for this purpose. Finally, mosaic bodies are bonded in place by cementitious material to form the mosaic background for the design, and if desired, other mosaic bodies may be added to occupy spaces in the area of the design itself between relief elements of the design.

An important feature of the invention is that the off-set portions of the formed plastic sheet may be used to simulate discrete mosaic bodies so that the lines of the design itself appears to comprise a series of separated bonded mosaic bodies. For this purpose, the off-set portions of the formed sheet are shaped with spaced transverse grooves which are filled with cementitious material.

In the application of the invention to the production of an applique panel where the design includes mosaic areas but has a background of different character, for example, a plain background, the formed sheet is trimmed close to the peripheral design elements to avoid leaving a flat margin around the design. This closely trimmed design sheet is then bonded to a panel plate the surface of which furnishes the background for the design. Then mosaic bodies are bonded to the flat portions of the formed sheet to fill in the design areas that are defined by the off-set portions of the sheet.

The various features and advantages of the invention may be understood from the following detailed description considered with the accompanying drawing.

In the drawing, which is to be regarded as merely illustrative:

Fig. 1 is a perspective view of a sheet of plastic material molded to an off-set configuration to represent a design in relief;

Fig. 2 is a fragmentary enlarged sectional view of the molded sheet in an upside down position showing how the off-set portions of the sheet may be filled with cementitious material;

Fig. 3 is a perspective view showing the trimmed molded sheet secured to a base member and also showing how the mosaic bodies may be bonded to the base member by suitable cementitious material;

Fig. 4 is a transversed sectional view of the finished mosaic panel on a somewhat enlarged scale, the section being taken as indicated by the line 4—4 of Fig. 5;

Fig. 5 is a plan view of the finished mosaic panel; and

Fig. 6 is a plan view of an ornamental circular plaque incorporating a similar molded sheet in an applique design.

In the drawing exemplifying a selected practice of the invention, Fig. 5 shows a decorative panel having a design in relief, generally designated D, with a mosaic background comprising decorative bodies or mosaic elements 10. The panel structure includes a suitable base member to which the mosaic bodies 10 are bonded by a plaster composition or other suitable cementitious material 12 in a well-known manner. As heretofore stated, the relief design D is customarily embodied in a ceramic plaque which is also bonded to the base member.

In the present practice of the invention, a base member 14 is used, as indicated in Fig. 4, this base member

being made of linocellulose hard board which is commercially available under the trade name "Masonite."

Fig. 1 shows how the relief design D may be formed in accord with the teachings of the invention by molding a flat sheet 15 of suitable thermoplastic material, the sheet being molded to provide portions 16 off-set from the plane of the sheet in accord with the design. If the plastic sheet 15 is translucent or opaque, the hollow off-set portions 16 will have the appearance of solid elements rather than hollow elements. Fig. 1 also shows how the off-set portions 16 may be further formed with transverse outer grooves 17 if it is desired to have the relief design simulate discrete mosaic bodies, as will be explained.

In the preferred practice of the invention, the sheet 15 is a substantially transparent sheet and the off-set portions 16 are coated on their under surfaces with suitable material such as a suitable paint of opaque or semi-opaque character to give the off-set portions the appearance of solid relief elements. The coating of the inner surfaces of the off-set portions 16 may be of any suitable color appropriate for the design. While the colored coating may be restricted to the off-set portions 16, nevertheless the coating material may extend over the entire area of the under side of the sheet 15 if desired. In Fig. 2, a portion of the sheet in section is shown in upside down position and the inner colored coating which is indicated by numeral 18 is substantially restricted to the off-set portions.

The preferred practice of the invention further includes the step of filling the hollow off-set portions 16 with cementitious material such as plaster or the like so that the relief elements of the design D not only have the appearance of being solid elements but actually are solid elements. Fig. 2 shows how the hollow off-set portions 16 may be filled with cementitious material 20. I have found that an excellent bond may be obtained between the cementitious material 20 and the inner coated surfaces of the plastic sheet 15 if a suitable adhesive is applied to the inner coated surface of the sheet before the off-set portions 16 are filled with the cementitious material 20. Casein type adhesives have been found to be excellent for this purpose. It is also possible to mix the adhesive with the cementitious material 20 for this purpose instead of applying the adhesive directly to the under surface of the sheet 15.

The whole sheet 15 may be mounted on the base member 14, but in the preferred practice of the invention, the sheet is trimmed to lesser size. For example, the sheet 15 may be trimmed along the broken line 22 of Fig. 1, to result in a trimmed sheet which is shown in Fig. 3, the trimmed sheet having a flat margin 24 surrounding the design D. The trimming operation may be performed before or after the off-set portions 16 of the sheet 15 are coated on their inner surfaces with colored material and, if desired, may be performed after the hollow off-set portions are filled with the cementitious material 20.

The trimmed sheet 15 is bonded to the base member 14 in any suitable manner. In the preferred practice of the invention, the under surfaces of the flat portions of the processed sheet 15, including the margin 24, are bonded directly to the base member 14 by means of the casein type adhesive. If desirable, tacks 25 may be used to attach the formed sheet to the base member 14, the tacks being used either in addition to the adhesive material or in substitution for the adhesive material. The flat portions of the sheet in the midst of the design D may be bonded to the base member 14 at selected points, or all of these flat portions in the design may be coated with adhesive on their under surfaces to have their whole areas bonded to the base member.

The next step is to mount the mosaic bodies 10 to form the background for the design D. If the sheet 15 is trimmed in the manner described, some of the mosaic bodies 10 for the background will be bonded to the margin 24 of the molded sheet 15 by the cementitious material

12 and the remaining mosaic bodies of the background will be bonded directly to the base member 14 by the cementitious material.

As may be seen in Fig. 1, the relief design D has blank areas, and as may be seen in Fig. 5, decorative mosaic bodies 26 may be bonded to the sheet 15 in these areas by means of additional cementitious material 28. If the formed sheet 15 has the transverse grooves 17, these grooves are filled with additional cementitious material 29 to give the relief design the appearance of being made of discrete mosaic bodies.

The four side edges of the completed mosaic panel may be encased in metal trim 30 that is shown in phantom in Fig. 4. The metal trim 30 may be in the form of a metal strip having a lower flange 32 and an upper flange 34.

Fig. 6 shows how the invention may be applied to the production of an applique panel. The background of the design is the ornamental grain of a circular wooden panel member 35. The relief design D is provided by a formed plastic sheet in the manner heretofore described but the transverse grooves 17 are omitted. Since the peripheral edges of the relief design are exposed, the formed sheet is trimmed close to the peripheral off-set elements, there being no flat margin around the design. Mosaic bodies 36 of suitable materials and colors are then bonded to the flat portions of the formed sheet in the design area but since the design is an applique design no cementitious material is used around the mosaic bodies.

My description in specific detail of the selected practice of the invention will suggest various changes, substitutions and other departures from my disclosure within the spirit and scope of the appended claims.

I claim:

1. A method of incorporating a design in relief in a decorative mosaic panel having a base member, including the steps of: molding a portion only of a flat sheet of plastic material to form outwardly off-set elongated portions adjacent flat portions to represent said design with narrow shallow transverse depressions on the outer side of said elongated off-set portions subdividing the off-set portions; bonding spaced decorative mosaic bodies to flat portions of said sheet adjacent said off-set portions; filling in the spaces between said bodies with material to complete a mosaic background for the off-set design; and filling said narrow depressions with material to give the off-set design the appearance of being made of discrete mosaic bodies.

2. A method as set forth in claim 1 in which said flat sheet of plastic material is substantially transparent and which includes the steps of coating the inner surfaces of said off-set portions of the sheet with colored material.

3. The method as set forth in claim 1 which includes the step of filling the interior of said off-set portions with solid material to make the off-set portions rigid.

4. A decorative tile-type panel, comprising: a rigid base plate; a sheet of plastic material having extensive flat portions in a common plane bonded directly to said base plate in face to face relationship and having hollow portions offset outward from said plane to form said design, said offset portions being relatively narrow elongated portions forming lines of the design, said flat portions including flat portions surrounding the design and flat portions within the area defined by the lines of the design; bodies of cementitious material filling said hollow portions of the sheet to make the hollow portions rigid and unyielding; a layer of cementitious material adhering to said flat portions of the sheet; and discrete mosaic bodies imbedded in said layer to form a background for the design.

5. A decorative tile-type panel, comprising: a rigid base plate; a sheet of plastic material having extensive flat portions in a common plane bonded directly to said base plate in face to face relationship and having hollow portions offset outward from said plane to form said design, said offset portions being a plurality of elongated portions

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arranged end to end to form lines of said design, said elongated portions being separated by depressions in the sheet, said flat portions including flat portions surrounding the design and flat portions within the area defined by the lines of the design; a layer of cementitious material adhering to said flat portions of the sheet; and discrete mosaic bodies imbedded in said layer to form a background for the design.

6. A decorative tile-type panel, comprising: a sheet of substantially transparent plastic material having extensive flat portions in a common plane bonded directly to said base plate in face to face relationship and having hollow portions offset outward from said plane to form said design, said offset portions being a plurality of elongated portions arranged end to end to form lines of said design, said elongated portions being separated by depressions in the sheet, said flat portions including flat portions surrounding the design and flat portions within the area defined by the lines of the design; coloring material on the

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inner surfaces of said offset portions; a layer of cementitious material adhering to said flat portions of the sheet; discrete mosaic bodies imbedded in said layer to form a background for the design; and bodies of cementitious material filling said offset hollow portions of the sheet to make the hollow offset portions rigid and unyielding.

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