April 19, 1966 J. ZAHA 3,247,299

METHOD FOR MAKING PRE-CAST TERRAZZO TILE

Filed July 27, 1961

FIG. 1

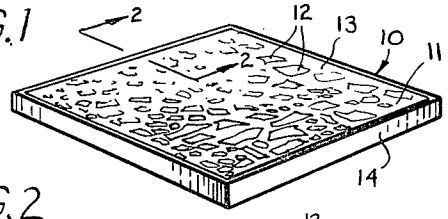


FIG. 2

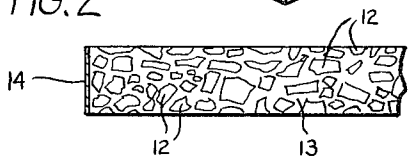


FIG. 4

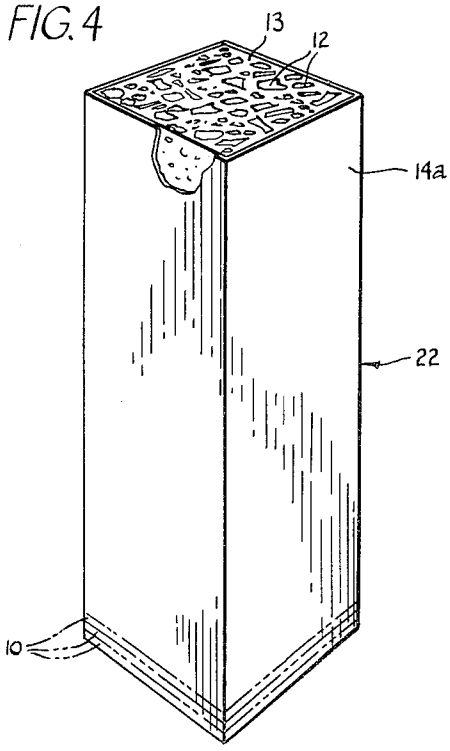


FIG. 5

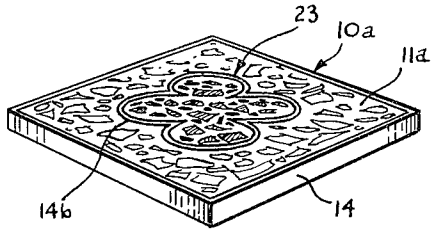
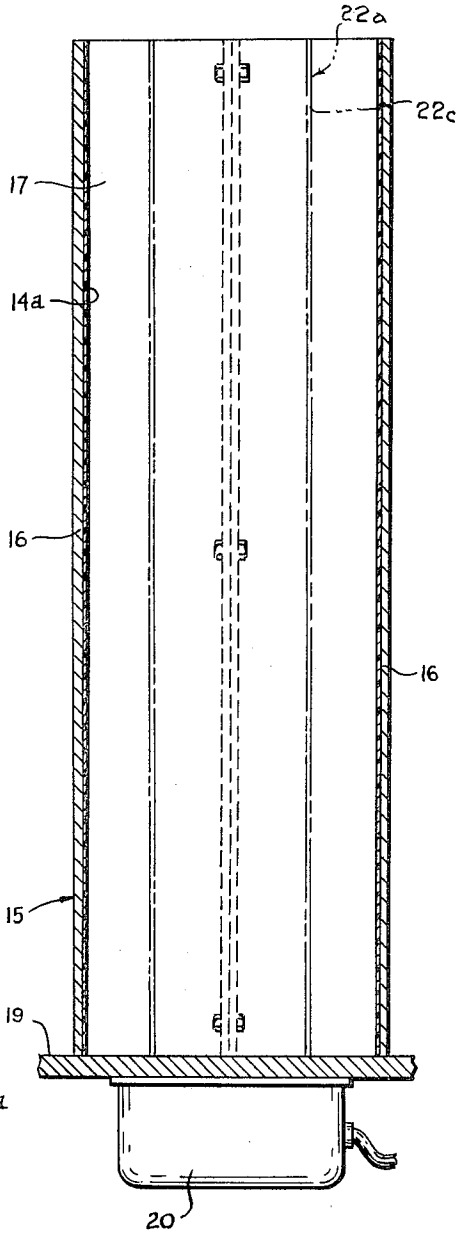


FIG. 3



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METHOD FOR MAKING PRE-CAST TERRAZZO TILE

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This invention relates to a method of making pre-cast terrazzo tile.

Heretofore, terrazzo tile has been produced by various methods, generally by pouring a fluid terrazzo mix in a mold and compacting the mix into an individual tile which, after being cured or hardened, was polished to provide a finished surface on the same. The considerable length of time required to produce such tiles, however, made the individual tiles expensive and accordingly limited the range of marketing the same.

One object of the present invention is to provide a method of making pre-cast terrazzo tiles at a relatively small fraction of the cost per tile as made by prior art methods.

Another object of the invention is to make tiles by the method referred to in the preceding paragraph, including additional steps by which tiles of more elaborate, varicolored designs may be produced at commensurately low cost per tile.

Another object of the invention is to produce tiles of the character described having means thereon adapted to eliminate the necessity for grouting material in the interstices between adjacent tiles installed on a floor.

Other objects of the invention will be manifest from the following brief description and the accompanying drawings.

Of the accompanying drawings:

FIGURE 1 is a perspective view of a tile produced by the method of the invention.

FIGURE 2 is an enlarged fragmentary cross-section, taken substantially on the line 2—2 of FIGURE 1.

FIGURE 3 is a vertical cross-section of a collapsible sectional mold, mounted on a vibratory table for practicing the method of the invention.

FIGURE 4 is a perspective view of a compacted block of terrazzo tile mix produced in the mold of FIGURE 3, and from which a plurality of the tiles of FIGURE 1 are obtained by subsequent steps of the method.

FIGURE 5 is a perspective view, corresponding to FIGURE 1, but illustrating a tile produced by a modified form of the method of the invention.

Referring to FIGURES 1 and 2, there is illustrated a finished terrazzo tile **10**, of suitable standard size, such as 9" x 9" x ½", the same comprising a body **11** of a compacted and cured mixture of marble chips **12**, **12** and tinted cement **13**. A thin coating or layer **14** of flexible material, such as cardboard, or fused polyvinyl chloride, is adhered around the peripheral edges of the body, and may be utilized in place of grouting or filler material when a number of such tiles are laid edge to edge on a floor. If desired, the tiles may be used in known manner with the layer **14** removed.

For practicing the method of the invention, a collapsible sectional master mold **15** of rigid material is provided, as shown in FIGURE 3, the same having four walls **16**, **16** defining an open-ended article-forming cavity **17** of substantial length and of rectangular cross-section. The walls **16** may be covered by a thin layer **14***a* of paper, or of elastic material such as cured polyvinyl chloride. The layer **14***a* may be prevented from adhering to the master mold as by a coating of paraffin. When polyvinyl chloride is used, layer **14***a* may be premolded to the shape of the cavity **17**. Mold **15**, with layer **14***a* therein, may be mounted in upright position on a vibratory table **19** to have one end closed by the table and the other end opening upwardly, as shown in FIGURE 3.

The steps of the method are as follows:

With the lined mold **15** in position as shown in FIGURE 3, it is filled with a terrazzo mix, including a two-to-one mixture of marble chips **12** (200 lbs.), or other vari-colored aggregate adapted to be polished, and white or grey Portland cement **13** (100 lbs.), and a sufficient amount of water to bond the mixture together, the wet mixture being subjected to vibrating action as by means of an electric vibrator **20** affixed to the underside of the table to effect compacting or solidification of the mixture as a homogeneous mass in which the chips **12** are discretely arranged throughout the resultant block **22**. The cement may contain a suitable coloring matter contrasting with the colors of the chips. During the aforesaid compacting stage any water which rises to the top of the mold should be squeezed or trowelled off in known manner.

Now the sectional mold **16** may be taken apart in sections to expose the compacted block **22** with the liner **14***a* firmly adhered thereto (see FIGURE 4). The block is then either set aside for a natural cure for a period of about 24 hours, for example, or for a more rapid cure in the presence of open steam or heated air.

The fully cured block **22**, with the liner **14***a* retained thereon, is now cut or sliced into plates or tiles **10**, **10** of uniform thickness (see FIGURE 1), as indicated in chain-dotted lines in FIGURE 2. Such cutting or slicing may be accomplished by means of a high-speed diamond-toothed saw, or an abrasive saw, or a wire saw. The tiles or plates **10** may be cut from the block one at a time, or gang-type cutting means may be utilized, but in any event water should be sprayed on the block **22** at point of cutting contact during the cutting operations.

Next, the tiles **10** with peripheral edges thereof covered by the liner material **14**, may have one or both of the cut sides treated to provide a suitable finish or partial finish. A fine, smooth finish or polish, however, may be achieved by means of a fine grit stone or wheel on a high speed motor unit. The finished sides may then be washed or otherwise cleaned, sealed with a terrazzo sealant, and finally waxed with a suitable wax.

In use of the finished tiles **10** (see FIGURE 1), they may be laid on a floor with use of suitable grouting material, as in the past, with or without the peripheral liner **14** retained thereon. The tiles **10** may be laid on a layer of grouting, but with the liner portions **14** of adjacent tile edges in intimate contact. In this way the liner portions **14** obviate the usual tedious task of applying grouting cement in spaces between the tiles, and in addition eliminate any tendency for the adjacent edges of tiles to become chipped due to straining or rubbing action, especially where expansion and contraction may occur. When the liner material **14** is of polyvinyl chloride or similar elastic material it is especially suitable for elimination of grouting between adjacent tiles.

As a modification of the invention, tiles may be produced with terrazzo inserts of predetermined shapes or configurations integrally incorporated therein. FIGURE 5 illustrates a tile **10***a* in all respects like the tile **10** of FIGURE 1, except that it includes an irregular-shaped insert **23**. The insert **23** is of terrazzo mixture, preferably in colors which contrast with the coloring of the outer body portions **11***a* of the tile, and the two contrasting body portions may be separated by a cardboard or polyvinyl chloride liner **14***b*, corresponding to the outer liner portions **14**.

For producing tiles **10***a* shown in FIGURE 5, an insert body **22***a* (see chain-dotted lines in FIGURE 3) of the same length as body **22** in FIGURE 4, and having the same cross-section as insert **23**, is produced in a rigid,

sectional master mold in the manner as described for producing the block **22** of FIGURE 4. This insert block **22***a*, after removal from the respective rigid master mold, is positioned inside the lined master mold of FIGURE 3. A liner **22***c* corresponding to liner **14***a* may be retained on the insert block **22***a* to facilitate retaining the molded shape thereof. The space between between the insert block **22***a* and the master mold liner **14***a* is then filled with fluid terrazzo mixture, which is compacted as before, after which the master mold **15** is removed and the compacted tile block **22**, including the insert block **22***a*, is cured, and cut, and treated to provide finished tiles of uniform thickness as previously described, and as shown in FIGURE 5.

It is to be understood that any number of tiles may be likewise produced to have such inserts in a variety of shapes and color combinations. In any event the liner portions **14***b* additionally serve to prevent the colors from running from one body section to another of the uncut block corresponding to that shown in FIGURE 4. Moreover, any desired number of blocks **22** of substantial length may be produced and cured for subsequent cutting and finishing operations in relatively large groups.

Modifications of the invention may be resorted to without departing from the spirit thereof or the scope of the appended claims.

What is claimed is:

1. A method of making terrazzo tile, comprising the steps of providing an elongated mold of predetermined cross-sectional size and shape corresponding to the size and shape of the finished tile, covering the tile shaping wall portions of the mold with a thin-walled inner liner of yieldingly compressible elastic material, filling the lined mold with hardenable fluid, cementitious, terrazzo-like mixture and compacting the same, allowing the compacted mix to become at least partially hardened and removing the same from the mold as a solid block with the elastic liner adhered thereon, cutting the cured block into a plurality of slices constituting tiles of predetermined uniform thickness having corresponding peripheral strips of the elastic material adhered around the peripheral edges of the tiles, and abrading at least one cut surface of the respective said tile slices to finish the same, the finished tiles being adapted to be laid flatwise in edge-to-edge relationship on a surface with the elastic peripheral strips of adjacent edges of the tiles in direct pressure-absorbing abutment.

2. A method of making terrazzo tile, comprising the steps of providing an elongated mold of predetermined cross-sectional size and shape corresponding to the size and shape of the finished tile, covering the tile shaping wall portions of the mold with a thin-walled inner liner of yieldingly compressible elastic material, filling the lined mold with hardenable fluid terrazzo mixture of Portland cement and discretely distributed decorative pieces of relatively hard material; vibrating the mold to compact the mix to become at least partially hardened, removing the compacted mix from the mold as a hardened block with the elastic liner adhered thereon, cutting the cured block into a plurality of slices constituting tiles of predetermined uniform thickness having corresponding peripheral strips of the resilient material adhered around the peripheral edges of the tiles, and abrading at least one cut surface of the respective said tile slices to finish the same, the finished tiles being adapted to be laid flatwise in edge-to-edge relationship on a surface with the elastic strips of adjacent edges of the tiles in direct pressure-absorbing abutment.

3. A method of making terrazzo tile, comprising the steps of providing an elongated mold of predetermined, relatively large cross-sectional size and shape corresponding to the size and shape of the finished tile; covering the tile shaping wall portions of the mold with a thin inner liner of yieldingly compressible elastic material; providing at least one elongated mold of relatively smaller cross-

sectional size and shape likewise having shaping wall portions covered with a thin layer of elastic material; filling the at least one smaller mold with hardenable fluid, cementitious, terrazzo-like mixture and compacting the same; removing the compacted mix from the at least one smaller mold as a block with the elastic liner adhered thereon and allowing the same to cure within the liner; mounting said at least one smaller cured block with the liner thereon upright within the larger mold to have the liners of the respective molds freely exposed within the larger mold; filling the space in the larger mold defined between said freely exposed liners with fluid terrazzo mixture and compacting the same as a composite larger block containing said at least one smaller block; cutting the composite block into a plurality of slices constituting tiles of predetermined uniform thickness having correspondingly cut strips of the elastic material adhered around the outer peripheral edges of the resultant composite tiles and similar elastic peripheral strips intermediate the respective larger tile bodies and the smaller cut block portions therein; and abrading at least one cut surface of the respective composite tiles to finish the same; the finished tiles being adapted to be laid flatwise in edge-to-edge relationship with the elastic strips of adjacent outer edges of the composite tiles in direct pressure-absorbing abutment.

4. A method of making terrazzo tile, comprising the steps of providing an elongated mold of predetermined, relatively large cross-sectional size and shape corresponding to the size and shape of the finished tile; providing at least one elongated mold of relatively smaller cross-sectional size and shape likewise having shaping wall portions covered with a thin layer of elastic material; filling the at least one smaller mold with fluid, cementitious terrazzo-like mixture and compacting the same; removing the compacted mix from the at least one smaller mold as a block with the elastic liner adhered thereon and allowing the block to cure within the liner; mounting said at least one smaller cured block with the liner retained thereon upright within the larger mold to have the liner freely exposed within the larger mold; filling the space between the mold wall of the large mold and the exposed liner of the block with fluid, cementitious terrazzo-like mixture and compacting the same as a composite larger block containing said at least one smaller block; cutting the composite block into a plurality of slices constituting tiles of predetermined uniform thickness having strips of the elastic material intermediate the respective tile bodies generally and the smaller block portions therein; and abrading at least one cut surface of the respective said tiles to finish the same.

5. A method as in claim **3**, said elastic liner material being polyvinyl chloride.

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