Feb. 15, 1938. W. S. JOHNSTON 2,108,226

COMPOSITION TILE

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Fig. 1.

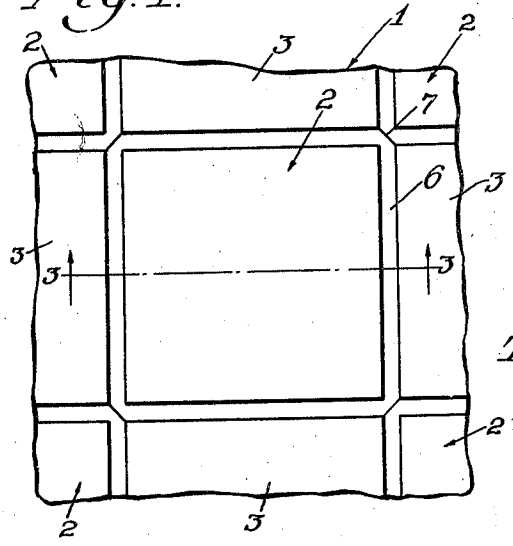

Fig. 1a.

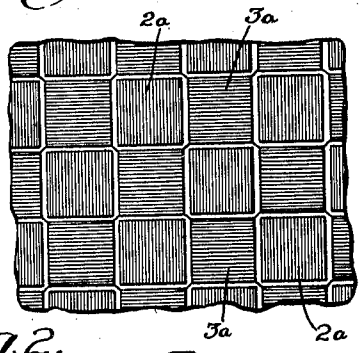

Fig. 2.

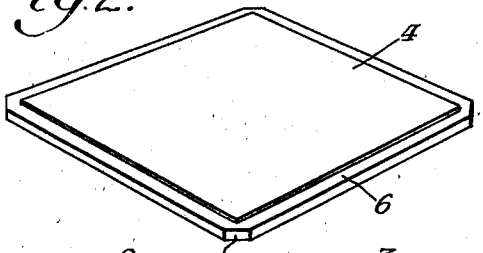

Fig. 3.

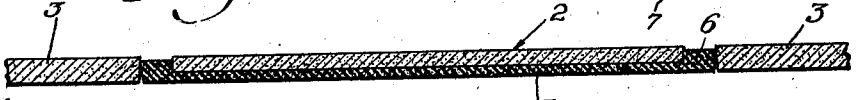

Fig. 4.

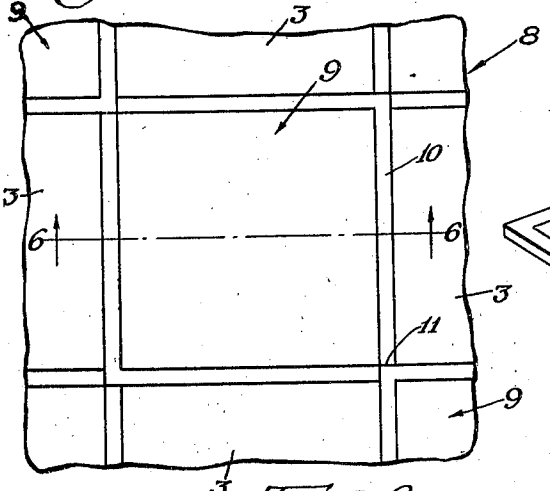

Fig. 5.

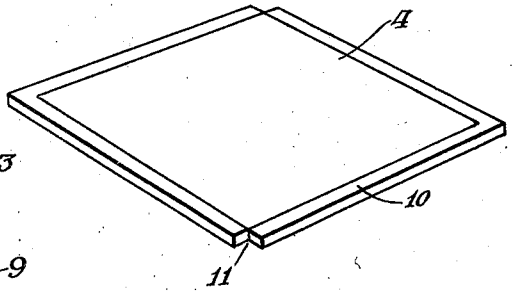

Fig. 6.

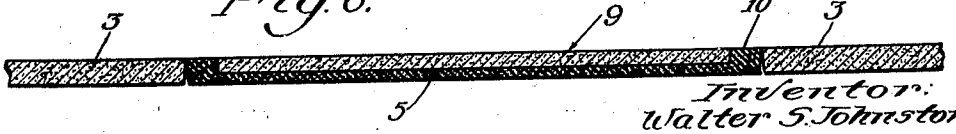

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Fig. 7.

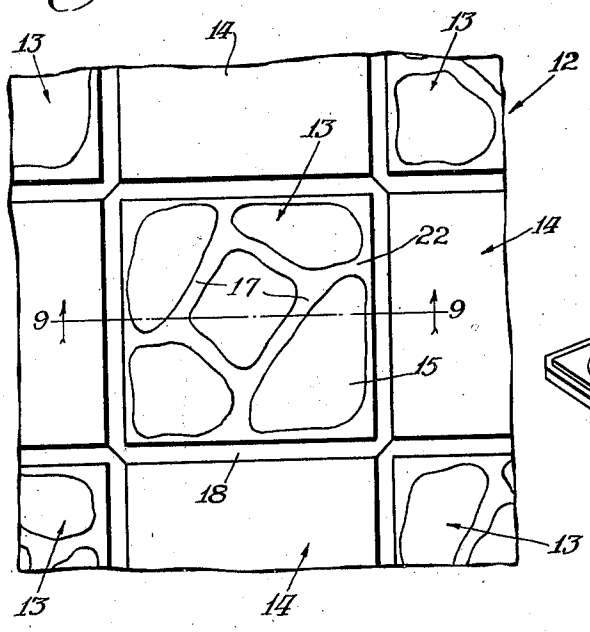


Fig. 8.

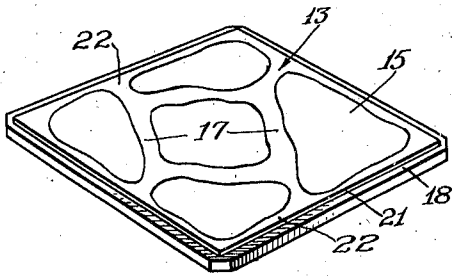


Fig. 9.

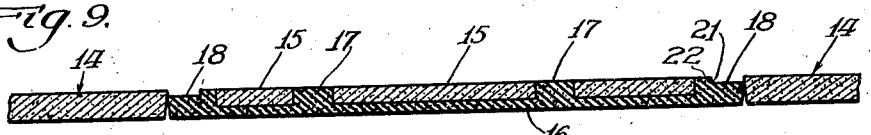
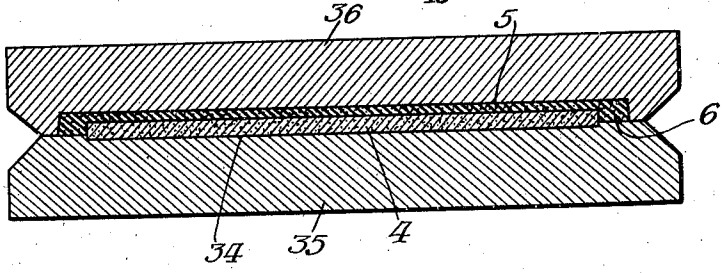


Fig. 10.



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UNITED STATES PATENT OFFICE

2,108,226

COMPOSITION TILE

Walter S. Johnston, Chicago Heights, Ill., assignor to The Tile-Tex Company, Chicago Heights, Ill., a corporation of Illinois

Application January 6, 1936, Serial No. 57,778

4 Claims. (Cl. 94—3)

This is a continuation in part of my copending application for United States Letters Patent, Serial No. 647,755, filed December 17, 1932.

This invention relates to improvements in surfaces constructed of moulded composition tile and the composition tile for constructing such surfaces, and refers specifically to a composition tile surface comprising composition tile of desired shape encompassed by a border or a border and back of similar composition of a contrasting color whereby said border, when the surface is laid, simulates a mortar joint between adjacent tile or blocks.

Heretofore, composition tile floors and walls have suffered in appearance in comparison with the usual ceramic tile constructions, due to the fact that incident to laying ceramic tile a mortar joint, of necessity, is provided between adjacent tile which materially contributes to the appearance of the finished surface. Composition tile laid in the usual manner, of course, requires no joints of this nature and the monotony of appearance of the surface could only be broken and a contrast obtained by the variations of color of adjacent tile.

It has heretofore been proposed to provide relatively narrow strips of composition tile which are laid between adjacent tile and of a contrasting color to that of said tile to simulate the mortar joints of ceramic tile. However, the laying of a floor or other surface in this manner requires skillful labor and is a tedious, expensive task, particularly in view of the fact that relatively long and narrow strips of composition tile, for instance, an asphalt asbestos composition, tend to curl up at the ends and are relatively frangible.

As a feature of my invention, a floor or other surface may be constructed of composition tile which has the desirable appearance striven for in using the interpositioned strips, as described above, but which may be manufactured and laid for a fraction of the cost.

One of the important features of my invention resides in a surface constructed of composition tile some of which are of composite construction and are provided with separate mortar-simulating joints united thereto, said composite tile being so laid with respect to plain or unbordered tile as to provide a mortar-simulating joint between desired individual tile.

Briefly described, my invention comprises a composition tile block which includes a plurality of contrastingly colored portions so moulded and united as to present a block or tile unit embraced by a mortar-simulating joint or border. In constructing my improved tile surface, composite tile, that is tile embedded in, and/or being embraced on all sides by mortar-simulating borders, is so laid with respect to plain or unbordered tile as to provide joints or borders between desired adjacent tile. In this manner, a surface presenting the appearance of ceramic tile with mortar joints is simulated, the surface, by virtue of the relative positioning of the bordered tile with respect to the unbordered tile, being constructed only of a portion of bordered tile and a portion of the less expensive unbordered tile.

Other objects and advantages of my invention will be apparent from the accompanying drawings and following detail description.

In the drawings, Fig. 1 is a top plan view of a portion of a tile covered surface illustrating the simulated mortar joint.

Fig. 1*a* is a similar view illustrating a larger section of the composition tile floor comprising my invention.

Fig. 2 is a perspective view of a tile unit having a mortar simulating border and diagonally cut corners.

Fig. 3 is a sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is a view similar to Fig. 1 embodying a modified form of tile.

Fig. 5 is a perspective view of a tile unit embodied in the surface shown in Fig. 4.

Fig. 6 is a sectional view taken on line 6—6 of Fig. 4.

Fig. 7 is a view similar to Fig. 1 showing a surface covered with another modified form of tile.

Fig. 8 is a perspective view of a tile unit comprising a portion of the surface shown in Fig. 7.

Fig. 9 is a sectional view taken on line 9—9 of Fig. 7.

Fig. 10 is a diagonal sectional view of a die for cutting the composite tile.

Referring in detail to the drawings, 1 indicates a composition tile surface constructed of composite units 2 and the usual or plain units 3 disposed in edge abutting relationship. Each composite unit 2 may comprise a block 4 embraced by back 5 and encompassed on all sides by a continuous mortar joint simulating border 6. The units 2 and 3 may be staggered or checkered with respect to each other when laid to form surface 1, the arrangement being such that a unit 3 is positioned adjacent each edge of a composite unit 2, each block 4 being spaced from the four adjacent units 3 by a mortar joint simulating portion 6. In this manner one half of the units

comprising the surface will be composite units and the other half plain units.

In disposing the units 2 and 3 in staggered or checkered relationship, the corners of a composite unit or block 2 in one tier will abut the corners of the composite units or blocks in the next adjacent tier. In order to impart an appearance of regularity to the surface 1 and to make the mortar joint simulating border 6 continuous, the corners may be formed at an angle of 45 to the edges of the border 6 as shown best at 7 in Figs. 1 and 2. It can readily be seen that the surfaces formed by so cutting the corners of a composite unit or block in one tier will abut similar corner surfaces of the block diagonally opposite in the next adjacent tier. The surface dimensions of the units 3 and the inlaid tile 4 may be equal so that the edges of said units and blocks may be disposed in alignment. The thickness of each unit 3 may be equal to the sum of the thicknesses of each back 5 plus the thickness of an inlaid tile 4 so that the surfaces of the blocks 2 and units 3 may be disposed in a substantially common plane.

If desired the face of units 3 and blocks 2 may be positioned above the surface of the mortar joint simulating border 6 or said faces may be depressed below or flush with the surface of the joint. Further, if desired, the surface of the units 3 and blocks 2 may be irregular or slightly undulating to simulate pitted stone, stratification marks or rough hewn stone and the surface of the joints may also be irregular to simulate roughly troweled mortar.

Referring particularly to Fig. 1*a*, a surface 1 is illustrated comprising composite blocks 2*a* similar to blocks 2 with border 6 and back 5 and tile units 3*a* similar to tile 3. For purposes of illustration the inserted tile in the blocks 2*a* is colored red, whereas the plain or unbordered tile 3*a* is indicated as blue. It will be observed that although the surface area appears to be made up totally of bordered blocks, only half of the surface comprises bordered blocks, the complementary pieces being plain tile 3*a*. This appearance is brought about by the novel juxtapositioning of the bordered blocks with respect to the plain tile wherein the border of one composite block serves as the border for one side of four plain pieces. In this manner a predetermined surface area may be attractively covered by composition tile substantially one-half of the surface being made up of the less expensive plain tile.

Referring particularly to Figs. 4, 5, and 6, a slight modification of my invention is shown wherein 8 indicates a tile surface constructed of composite units or blocks 9 and the usual plain units 3. The blocks 9 may be substantially similar to the blocks 2 and may comprise a tile 4 embraced by a back 5 and encompassed by a mortar joint simulating border 10. The blocks 9 and tile 3 when laid to form surface 8 may be disposed with respect to each other in a manner similar to the disposition of the blocks 2 and tile 3 comprising the surface 1. That is, the composite blocks 9 may be staggered or checkered with respect to each other, the usual plain units 3 being interpositioned between the staggered blocks 9.

In order to form continuous mortar simulating joints 10 throughout the entire surface 8, diagonally opposite corners 11 of each of the composite blocks 9 may be recessed to a depth equal to the width of the joint 10. It can readily be seen that when said blocks and tile units are laid, the corners of each of the composite blocks 9 in one tier will register with and be positioned within the recesses 11 provided in the corners of composite blocks 9 in both adjoining tiers. In this manner the joints 10 may be continuous throughout the entire surface 8 and the edges of the tile inserts 4 and units 3 will be disposed in alignment.

In this modification, inserts 4 are shown as being flush with the surfaces of units 3 and joints 10. It is to be understood, of course, that said inserts may extend above the surface of joints 10 in which case the surfaces of units 3 will also extend above the surface of said joints, thereby imparting to units 3 and inserts 4 an appearance of uniformity and symmetry.

Referring particularly to Figs. 7, 8, and 9, a slightly modified form of my invention is shown wherein 12 indicates a composition tile surface constructed of composite blocks 13 and units 14. Each of the blocks 13 may comprise one or more inserts 15 which may be embraced by back 16 and encompassed by mortar simulating joints 17 which, conforming to the irregular contour of the inserts 15 are irregular in shape. Each of the blocks 13, if desired, may be provided with a regular defining border or joint portion 18 and each joint portion of each of the composite blocks may be similar. The units 14 may comprise tile 3 identical in construction with those described in conjunction with the forms of my invention shown in Figs. 1 and 1*a*.

The surface 12 may be made up throughout a portion of its area of composite blocks 13, interspersed with tile 3, the composite blocks 13 being disposed in corner abutting relationship and the tile 3 being in edge abutting relationship with respect to the borders of the composite blocks.

If desired, the edges of the blocks 13 may be depressed as shown best at 21 in Fig. 8, and the width of said depressed portion may be substantially equal in width to the mortar joint simulating portions 6 and 10 shown in Figs. 2 and 5, so that when the blocks 13 are positioned in edge abutting relationship with the units 3, the distance between adjacent upraised portions 3 and 22 will be substantially equal to the distance between a tile 4 and a unit 3 in the form shown in Figs. 1 and 4.

By the word "composition" as used in the specification, and claims, is meant a mixture comprising a binder, filler and pigment. The binder, although preferably of an asphaltic nature, may be any animal or vegetable pitch or natural or synthetic resin such as rosin, paracoumarone, phenolic, glyptol resins, and the like. It is to be understood, of course, that these binders may be used separately or, if desired, suitable mixtures or combinations thereof may be used. The filler may comprise asbestos, saw dust or the like and, of course, suitable pigment may be added to produce the desired color. In general, the composition may be such that the finished tile will not soften when exposed to room or atmospheric temperatures, nor will it crack or crumble when subjected to ordinary room traffic, yet the binder must be such that it can be rendered pliable or doughlike when subjected to temperatures above atmospheric or room temperatures and can be molded or pressed in a mold or die when in said pliable state.

The binder and filler utilized is normally very inexpensive and in some cases the pigment represents the major portion of the cost of the composition. This is particularly true where light colored tiles are used inasmuch as a relatively

large proportion of pigment is necessary to change the normally dark binder-filler mixture to a lighter shade. Especially is this so when asphalt is used as a binder since the same is normally very dark in color and is very inexpensive in itself. Obviously, darker colored tile requires a relatively small amount of pigment since the pigment is supplemented by the usual dark natural color of the binder.

This inherent characteristic of the material comprising the tile can be utilized to advantage by my invention. For instance, if the major portion of the surfaces 1, 8, 12, is to be constructed of relatively light colored tile, the units 2, 9, 13, respectively, may be so constructed that the major portion of the volume or bulk of the units may be of darker less expensive contrasting material. In other words, backs 5, 16 may be relatively thick, being of less expensive material, whereas blocks 4, 9 and 15 may be relatively thin, being of more expensive material. If the opposite arrangement is desired, that is, if the major portion of the surfaces 1, 8, or 12 is to be of relatively dark material interspersed by relative light colored material, blocks 4, 9 or 15, being of relatively inexpensive material, may constitute the major portion of the bulk or volume of the units whereas backs 5, or 16 may constitute the minor portion thereof. In other words, in this latter instance, units 4, 9 or 15 may be relatively thick whereas the respective backs may be comparatively thin.

As a matter of taste or preference, lighter colored surfaces seem to be predominantly more popular. This condition seems to obtain for all type wall or floor surfaces whether of ceramic tile, linoleum or composition tile. In the case of ceramic tile, the appearance of the tile is enhanced by interspersing the unit tile with relatively dark colored mortar joints. In my invention, by constructing the tile in the manner hereinbefore described, it has been found under some conditions substantially as economical to construct a surface having the interspersed mortar simulating joints as to construct the same surface area of plain light colored tile. In the former case a relatively larger proportion of the bulk of the composition comprising the surface may be relatively inexpensive dark colored composition whereas, in the latter case, the entire volume or bulk of the tile must, of necessity, be constructed of relatively expensive light colored material. In other words, the difference in material cost in one case substantially balances the cost of handling in the other. In all cases the cost of a tile surface constructed from tile comprising my invention compares favorably with the cost of plain, unbordered composition tile and is extremely more economical than a composition tile surface presenting the desirable appearance hereinbefore described but made in any other manner. In addition, by laying the composite blocks and unbordered tile in the manner taught by my invention a surface of predetermined area may be laid wherein only a portion of the pieces comprise the composite blocks. Yet the relative arrangement of the blocks to the tile is such that each tile unit to appearances is encompassed by a border.

In constructing composition tile, utilizing a binder of asphalt, for example, asphalt of desired characteristics as to melting point and hardness may be mixed with suitable proportions of asbestos or other like filler. The mixture may be heated and milled or kneaded, together with a suitable pigment, to a dough-like consistency and the resultant material may subsequently be rolled into slabs, cooled and cut to desired form. The slabs when cut are maintained in a relatively warm condition so that cracking or chipping will not take place during the cutting operation.

All forms of my invention may be manufactured in substantially the same manner, but for the sake of clarity in description and in the drawings, the manufacture of the form shown in Figs. 1, 2, and 3 will be particularly described.

In manufacturing composite blocks 2 and units 3 comprising surface 1, units 3 may be formed in the manner hereinbefore described. Similarly units 4 may be formed, units 4 being relatively thinner than units 3. The thickness of units 4, of course, may be governed by the relative cost of the pigment used for said units and the cost of pigment used for backs 5 and joints 6.

Slabs of material may be prepared, as hereinbefore described, the color thereof being that desired to contrast with units 3 and tile 4. Referring particularly to Fig. 10, a unit tile 4 may be positioned within depressed portion 34 of the lower die or mold 35. The unit 4 when so positioned may be cold or may be slightly warm to prevent possible cracking or rolling of the edges when pressure is applied. The slab prepared to serve as the back and joints of the tile may at this period be warm enough to permit deformation and cutting without cracking or chipping. Said slab may then be positioned between the lower die or mold 35 and upper mold 36 and the molds may be brought together under pressure. In this manner back 5 and joints 6 may be formed, the latter comprising an integral portion of the former. It can readily be seen that inasmuch as the unit 4 and back 5 are united under pressure, unit 4 being encompassed by joints 6, a unitary composite block will be formed.

The bonding action which takes place between the tile 4 and back and joints 6 may be attributable to the fact that both elements are brought together under pressure taken in conjunction with the fact that the back and joints being relatively hot, tend to heat the inlaid tile 4 thereby causing a bond which approaches cohesion in character. In addition, as hereinbefore described, the slab from which back 5 and joints 6 are formed, is at a relatively higher temperature than unit 4 even though some of the heat from the former may be conducted to the latter. Consequently, upon cooling, back 5 and joints 6 may tend to "shrink" on tile 4.

It is to be understood, however, that the above hypothesis offered in explanation of the bonding action of the constituents of the composite block is not to be construed as a limitation upon my invention.

If desired, tile 4 or the equivalent units shown in the other modifications of my invention, may be of a material entirely different in character from the composition comprising the back and joints. For instance, said units may be constructed of metal or other relatively rigid material.

Corners 7 and recesses 11 may be formed by the upper mold 36. In the case of units 15, shown in Figs. 7, 8, and 9, said units may be appropriately spaced in recess 34 of the lower mold 35 prior to the molding of the back 16 thereon.

If desired, all of the composite blocks comprising the various forms of my invention may

be constructed without a back. In this case the inlaid tile will be substantially the depth of the mold and the borders or mortar simulating joints will be molded around the tile. Further, in the modification shown in Fig. 8, the inlaid tile may, if desired, be of regular shape or contour and may be upraised or flush with the mortar simulating joints.

The expression "contrasting color" as used in the specification and drawings, of course, is not to be construed as a limitation of my invention since the composite block may be constructed of different shades of the same color or differently treated surfaces of the same color and/or shade.

I claim as my invention:

1. A surface comprising composition tile pieces, some of which include tile blocks of a predetermined composition embraced by a cup-shaped backing and border constructed of a different composition, and the remaining tile pieces comprising unbordered, unbacked tile blocks constructed of a material similar to said first-mentioned tile blocks, the first-mentioned tile blocks being of a lesser thickness than the unbordered, unbacked tile blocks, said first-mentioned tile pieces being in checkered relationship with respect to unbordered, unbacked tile blocks and being in corner abutting relationship with respect to each other.

2. A composition surface comprising tile blocks of predetermined composition imbedded in cup-shaped members of a different composition which form a border and backing for said tile blocks, and unbordered, unbacked tile blocks, said imbedded tile blocks being of a lesser thickness than said unbordered, unbacked tile blocks, said bordered and backed tile blocks being disposed in checkered relationship with respect to the unbordered, unbacked tile blocks, and being in corner abutting relationship with respect to each other.

3. A composition surface comprising tile blocks of predetermined composition imbedded in cup-shaped members of a different composition which form a border and backing for said tile blocks, and unbordered, unbacked tile blocks, said imbedded tile blocks being of a lesser thickness than said unbordered, unbacked tile blocks, said bordered and backed tile blocks being disposed in checkered relationship with respect to the unbordered, unbacked tile blocks, and being in corner abutting relationship with respect to each other, the corners of the borders formed by said cup-shaped members being truncated to abut the truncated corners of diagonally adjacent cup-shaped members.

4. A surface comprising composition tile pieces, some of which include composition tile blocks embraced by cup-shaped backings and borders of composition material and of contrasting color with respect to said blocks, and the remaining tile pieces comprising unbordered, unbacked composition tile blocks, the first-mentioned tile blocks being of a lesser thickness than the unbordered, unbacked tile blocks, said first-mentioned tile pieces being in checkered relationship with respect to unbordered, unbacked tile blocks and being in corner abutting relationship with respect to each other whereby the surface constructed of such tile pieces comprises approximately 50% unbordered, unbacked tile blocks.

WALTER S. JOHNSTON.