TILE WITH SPACER LUGS

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Application March 23, 1953, Serial No. 343,503

4 Claims. (Cl. 72—18)

The invention or discovery relates to tile with spacer lugs, and more particularly to tile or blocks made of ceramic material. Such ceramic tile or blocks may be square flat tile or blocks, which may be laid as a floor covering, or laid up as a wall usually in connection with trim base tile and trim cap tile.

In laying up flat tile in a wall, a bottom row of trim base tile is first laid, one or more rows of flat tile are then laid above the row of trim base tile, and a row of trim cap tile is laid above the top row of flat tile.

The trim base tile, the flat tile, and the trim cap tile may be more broadly termed tile or block units each having a front face, a back face, and a plurality of side faces. The front and back faces are generally parallel with each other and the side faces are generally perpendicular to the front and back faces. In most cases the side faces of the tile or block units are rectangular, and the front and back faces are rectangular and very frequently square.

The back faces of the tile units are placed in setting material which may be cement mortar or other adhesive material.

In many cases the joints between the side faces of adjacent tile or block units laid up in a wall, are parallel both horizontally and vertically. In some instances, it may be desired to lay up the tile with staggered joints between the vertically adjacent side faces.

A floor, similar alternative arrangements of the joints are used.

In any event, it is desirable that the joints between adjacent side faces of the tile or block units in either a wall or floor shall be uniform, so that substantially the same spacing may exist between each pair of opposite side faces of the set tile or block units.

It is also desirable that the setting material extend between the joints of adjacent side faces of the tile or block units from the back faces of the tile or block units to a uniform distance between the back and front faces of the tile.

The objects of the present invention or discovery include the provision of tile or block units preferably made of ceramic material and which have improved spacer lugs arranged on the side faces of certain of the tile or block units, whereby all tile or block units in a wall, includ trim base tile, covering or flat tile or block units, such improved tile or block units being adapted for use in floors as well as walls.

The foregoing and other objects are attained by the tile or block units, articles of manufacture, combinations and sub-combinations, which comprise the present invention or discovery, and the nature of which is set forth in the following general statement, and preferred embodiments of which together with their mode of use are set forth by way of example in the following description, and which are particularly and distinctly pointed out and set forth in the appended claims forming part hereof.

In general terms, the improved tile or block units of the present invention or discovery are preferably made of ceramic material, and each includes a front face and a back face, and polygonal side faces extending between the front face and the back face. On each side face there are formed a plurality of lugs, which are preferably uniformly spaced from each other in the direction between the end corners of the side face, the lug adjacent one corner on each side face being spaced a lesser distance from the one corner than the lug adjacent the other corner of the same side face.

By way of example, embodiments of the improved tile or block units of the present invention or discovery are illustrated in the accompanying drawings forming part hereof, in which:

Figure 1 is a perspective view showing one embodiment of the improved tile or block unit hereof in the form of a glazed ceramic tile;

Figure 2 is a top plan view of the tile of Fig. 1;

Figure 3 is an elevational view showing one side face thereof;

Figure 4 is an elevational view showing a wall including improved tile units of Figs. 1, 2, and 3, laid up with trim base tile and trim cap tile units.

Figure 5 is a perspective view showing a second embodiment of the improved tile or block unit hereof in the form of a glazed ceramic tile;

Figure 6 is an enlarged fragmentary elevational view showing one side face and side corner of the tile of Fig. 5; and

Figure 7 is a plan view showing a floor including improved tile units of Figs. 5 and 6.

Similar numerals refer to similar parts throughout the drawings.

One embodiment of the improved tile or block unit hereof in the form of a glazed ceramic tile is indicated generally by 10 and is shown separately in Figs. 1, 2, and 3, and laid up in a wall 11 shown in Fig. 4.

The tile or block unit 10 includes a back face 12, a top face 13, each of which is generally square, and four flat side faces 14 extend between the back face 12 and the top face 13. Adjacent side faces 14 make junction with each other at corners 15. The tile or block unit 10 is preferably made of fired ceramic material, and the top face 11 is glazed and has preferably rounded corners.

On each side face 14 there is formed a plurality of lugs 16 generally parallel with the corners 15, and the back end 17 of each lug 16 is located substantially in the plane of the back face 12 of the tile or block unit 10, and the top end 18 of each lug 16 is located intermediate the back face 12 and the top face 13. Each lug 16 is thus located between the back face 12 and the top face 13.

The distance between the back end 17 and the top end 18 of each lug 16 may be termed the "height" of the lug, and the width of the lug in the direction perpendicular to its height is substantially less than the height of the lug, and the height of the lug is less than the distance between the back face 12 and top face 13 of the unit.

Each lug 16 protrudes outwardly from the plane of one of the side faces 14 a distance which is less or narrower than its width and less than its height, as shown in Fig. 7. Further, as shown in Fig. 3, the protruding distance and also the width of each lug 16 decreases from the bottom to top of the lug.

On each side face 14 of each tile or block unit 10, the lugs 16 are equally spaced from each other. On each side face 14, however, one end lug 16 is spaced closer to the adjacent corner 15, than the spacing of the other.
end lug 16 from the other corner 15 of the particular side face. For example, in Fig. 1 the central or nearest corner 15 has an end lug 16 on the left side face 14 spaced closer to it than the spacing of the other end lug 16 of the left side face 14 from the left hand corner 15. On the right hand side face 14 as seen in Fig. 1, the extreme right hand lug 16 is spaced a lesser distance than the left hand corner 15 than is the spacing of the other end lug 16 on the right hand side face 14 from the center corner 15.

As best shown in Fig. 2, the lugs on each side face 14 of each tile or block unit 10 are spaced in a similar manner.

On the bottom face 12 of each tile or block unit 10 there may be provided a plurality of ribs 19.

In the wall 11 shown in Fig. 4, a bottom row of trim base tile each indicated by 20 is first laid up. Next, a row of the improved flat tile or block units 10 is laid on the upper side faces of the trim base tile units 20. Next, a top row of trim cap tile units each indicated generally by 21 is laid up on the top side faces of the flat tiles or block units 10.

As is clearly shown in Fig. 4, the location and arrangement of the lugs 16 provides for a uniform spacing of the joints between the adjacent side faces of the flat tile or block units 10, and also between the units 10 and lower trim base units 20, and between the units 10 and the upper trim cap tile units 21.

The side faces 14 are parallel with each other on opposite sides of each of the generally square tile or block units 10. The lugs 16 on one side face 14 are staggered with respect to the lugs 16 on the other opposite parallel side face 14. Thus in laying up the flat tile or block units 10 side by side as shown in Fig. 4, the lugs 16 on adjacent side faces 14 of the tile or block units 10 interfit with each other and the outer face of each lug 16 on each block unit 10 abuts the adjacent side face 14 of the adjacent side by side block unit 10, thus making uniform joints between the adjacent tile side faces 14. Further, the lugs 16 of one tile unit 10 cannot interfere with the lugs 16 of any adjacent tile units 10. The joints between the flat tile units 10, and the lower trim base tile units 20 are made in the proper manner by the spaced lugs 16 on the lower side faces 14 of the flat tile or block units 10.

Also, the joints are correctly formed between the top side faces 14 of the flat tile or block units 10 and the trim flat tile units 21.

The arrangement of the lugs 16 as above described permits laying the flat tile or block units 10 in a staggered manner, rather than in the checkerboard arrangement shown in the wall 11 of Fig. 4. Each tile or block unit 10 may be cut to make fractional tile pieces, each piece then having lugs on three side faces.

As shown, each lug 16 extends from the bottom face 12 of each flat tile or block unit 10 to a height less than the height or thickness of the side face, which is the height of the mortar in the joints when the tile are set.

A second embodiment of the improved tile or block unit hereof in the form of glazed ceramic tile is indicated generally by 110 and is shown separately in Figs. 5 and 6, and laid or set as a floor covering 111 shown in Fig. 7.

The tile or block unit 110 includes a back face 112, a top face 113, each of which is generally square, and four flat side faces 114 extend between the back face 112 and the top face 113. Adjacent side faces 114 make junction with each other at corners 115. The tile or block unit 110 is preferably made of fired ceramic material, and the top face 113 is glazed and has preferably rounded corners.

On each side face 114 there is formed a plurality of spacer lugs 116 generally parallel with the corners 115, and the back end 117 of each lug 116 is located substantially in the plane of the back face 112 of the tile or block unit 110, and the top end 118 of each lug 116 is located intermediate the back face 112 and the top face 113. Each lug 116 is thus located between the back face 112 and the top face 113.

The distance between the back end 117 and the top end 118 of each lug 116 may be termed the "height" of the lug, and the width of the lug in the direction perpendicular to its height varies from a maximum at its back end to a minimum at its top end, and on the average is substantially less than the height of the lug, and the height of the lug is less than the distance between the back face 112 and the top face 113 of the unit.

Each lug 116 protrudes or projects outwardly from the plane of one of the side faces 114 a distance which is less or narrower than its width at its back end, and decreases progressively to its top end. Further, as shown in Fig. 5, the protruding distance is less than its height. Still further, as best seen in Fig. 6, the width of each lug 116 decreases from the back end to bottom of the top of the lug.

Each lug 116 may be otherwise described as being a pyramidal lug, and its back end 117 constitutes the base of the pyramidal lug, and its top end 118 constitutes the apex of the pyramidal lug. One side face of the pyramidal lug is merged with one of the side faces 114 of the tile and block unit 110, and the other exposed side faces of the pyramidal lug taper upwardly from its base to its apex.

On each side face 114 of each tile or block unit 110, the lugs 116 are equally spaced from each other. On each side face 114, however, one end lug 116 is spaced closer to the adjacent corner 115 than the spacing of the other end lug 116 from the other corner 115 of the particular side face.

The tile or block unit 110 thus differs from the tile or block unit 10 only in the shape of the lugs 116 as compared with the shape of the lugs 16.

In the floor covering 111 shown in Fig. 7, the flat tile or block units 110 are set in a checkerboard arrangement, and shown before the jointing mortar. From a broad standpoint the wall 11, and the floor covering 111, each constitutes a multiple block unit construction in which each block unit includes a side face adjacent a side face of another block, and in which each adjacent side face terminates in corners located similarly to the corners of the other, and in which each adjacent or opposite side face is provided with protruding spacer lugs, the spacer lugs on one side face including one located nearer one corner of its side face than is the distance between the spacer lug on the opposite side face from its similar corner, and the spacer lugs on each side face being equally spaced. Thus, none of the spacer lugs of one block unit can interfere with the spacer lugs of adjacent block units.

As illustrated, the tile or block units 10 and 110 have square top and bottom faces. Tile or block units embodying the present improvements may be rectangular when desired.

It is noted that each of the tile or block units 10 is identical with every other block unit 10 in the wall 11 shown in Fig. 4. Similarly, each of the tile or block units 110 is identical with every other block unit 110 in the foot covering 111 shown in Fig. 7.

In the foregoing, certain terms have been used for brevity, clearness, and understanding, but no unnecessary limitations are to be implied therefrom beyond the requirements of the prior art, because such words
are used for descriptive purposes herein and are intended to be broadly construed.

Moreover, the embodiments of the improved constructions illustrated and described herein are by way of example, and the scope of the present invention or discovery is not limited to the exact details of construction set forth.

Having now described the invention or discovery, the construction, and use of preferred embodiments thereof, and the advantageous new and useful results obtained thereby; the new and useful constructions, and reasonable mechanical equivalents thereof obvious to those skilled in the art, are set forth in the appended claims.

I claim:

1. A tile unit having substantially square back and top faces, flat side faces extending between the back and top faces and terminating in corners between side faces, each side face having protruding therefrom a plurality of similar lugs on each side of the center line between the corners thereof, the spacing between all adjacent lugs being substantially identical, said lugs extending from said back face towards said top face but terminating short of said top face, said lugs having such a width along said side faces as to leave between adjacent lugs a space at least as great as the combined width of a plurality of said lugs, the lugs along the length thereof on each side face being located at substantially the same relative positions, each lug on any one side face being spaced from any corner common to an adjacent side face a distance different from the spacing of any lug on said adjacent side face from said common corner, and with each lug nearest each corner of each side face being farther from the center line of its respective side face than from said corner to which it is nearest, whereby a plurality of said tile units are positionable any side by any side with the corners thereof aligned or staggered so that the lugs on any side face of any tile unit abut the flat side faces of any adjacent tile unit.

2. A tile unit as set out in claim 1 wherein the protruding distance of each lug decreases as the lug extends away from said back face.

3. A tile unit as set out in claim 1 wherein said plurality of lugs on each side of said corner line consists of two lugs.

4. A tile unit as set out in claim 1 wherein the width of said lugs along said side faces is less than the spacing between said back and top faces.

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