July 13, 1926. 1,592,702

F. E. PETERS

TILE FLOOR, CEILING, AND ROOF CONSTRUCTION

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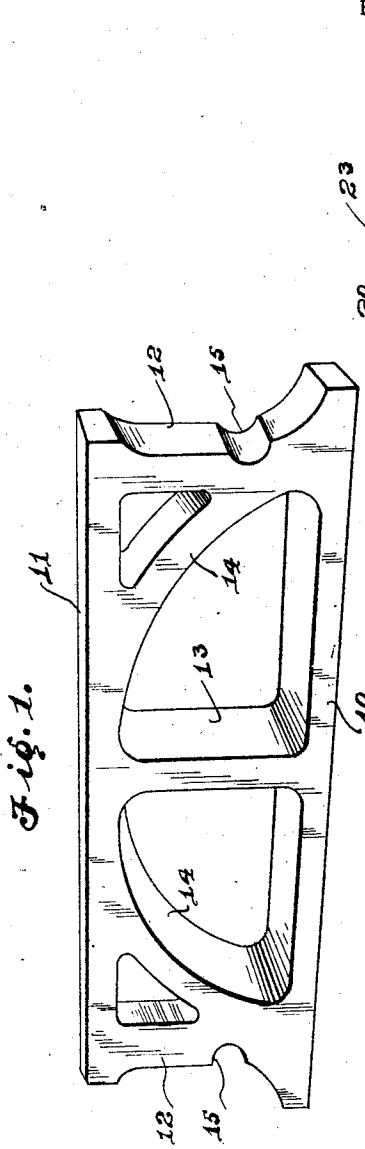

Fig. 1.

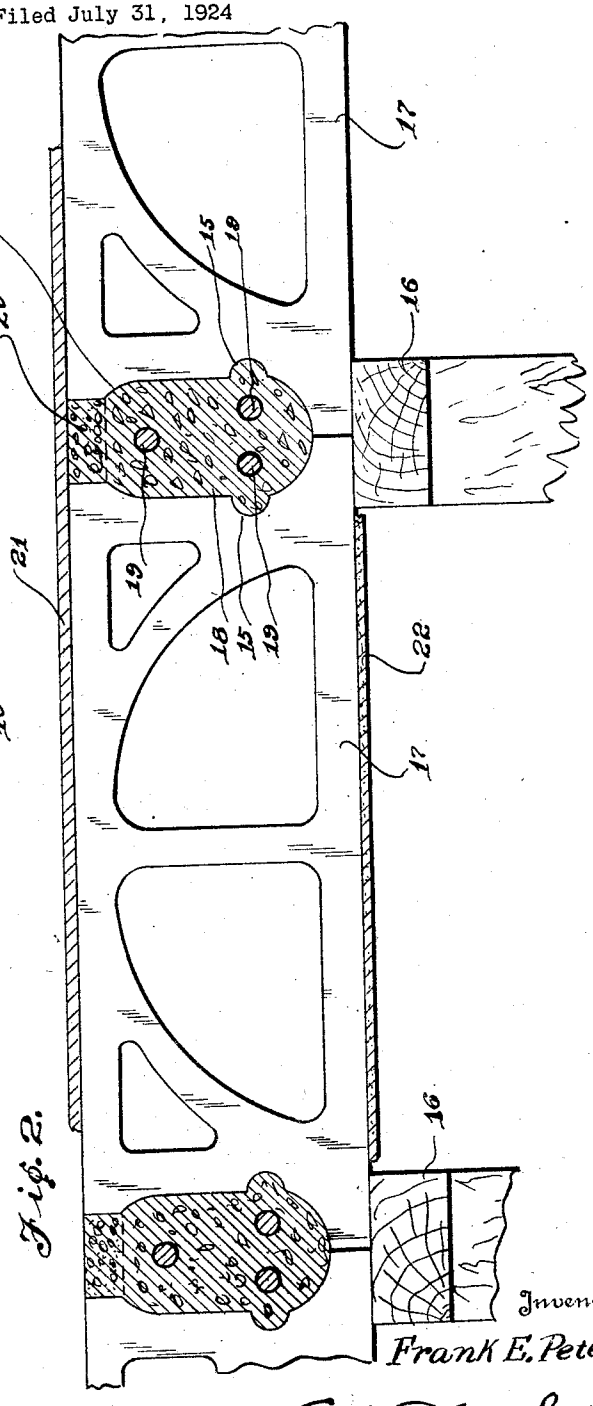

Fig. 2.

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UNITED STATES PATENT OFFICE.

FRANK E. PETERS, OF INDIANAPOLIS, INDIANA.

TILE FLOOR, CEILING, AND ROOF CONSTRUCTION.

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My said invention relates to an improvement in tile floor, ceiling and roof constructions and it is an object of the invention to provide a construction of this character which can be laid at less cost than those theretofore in use, as it does away with the necessity of a plurality of finishing coats for the floor and ceiling or at least decreases the number of such coats. In the ordinary construction the wet puddle concrete by means of which the tiles are held together gives off its moisture to the finishing material for the floor or roof to such an extent as to discolor this finishing material in spots. To cover the discolored spots it is necessary to make the ceiling or roof finish in several coats and my construction avoids needless labor in this connection while also economizing in material.

Another object of the invention is to provide a construction which will adjust itself readily to changes in the humidity of the atmosphere, one feature of such construction being a filler between the exposed portions of the tiles which when dry will harmonize with the tiles so as to be undistinguishable therefrom in color or material.

The principal object of the invention is to provide a construction which will stand up under a heavier load than those now on the market. In accordance with this object I provide the individual tiles with base flanges which will not break off and which will abut against each other so as to hold the connecting joists safely in place, and make these joists of special form.

Referring to the accompanying drawings which are made a part hereof and on which similar reference characters indicate similar parts,

Figure 1 is a perspective of my tile, and

Figure 2, a section showing tiles in place in a roof or floor or the like.

In the drawings reference character 10 indicates the base of a hollow tile having an upper portion in the shape of a bar 11 parallel to the base. The upper and lower parts are connected by end members 12 and a vertical central brace 13. The oblique braces 14 extend across the spaces between the uprights 12 and 13 such oblique members being rounded so as to form an arch extending from one lower corner of the tile to the opposite lower corner and the arch is braced by the upright 13. The tile has openings at each side of the upright 13 which are approximately triangular and smaller openings in the upper corners which are also triangular and which openings provide air channels and also lessen the weight of the tiles. At opposite ends the tile is cored out to form recesses for mortar with projecting flanges above and below, these recesses being deepest at 15 and the base projecting at its ends to engage the base flange of an adjacent tile, this portion of the base being of substantial thickness up and down so as not to be easily broken in handling. The tile is molded out of semi-wet concrete.

In building a horizontal structure, such as a floor, temporary supports 16 of any desirable or conventional character are provided at intervals corresponding to the length of the tiles. The tiles as indicated at 17 are made with their ends in contact directly over the support 16 and the space at 18 is then filled in with wet puddle concrete, reenforcing rods 19 being arranged to extend through the chambers between the end of adjacent tiles from end to end, or from side to side, of the building. The space at 20 between the upper ends of adjacent tiles above the dotted line is then filled in to a depth comparable to the thickness of the upper bar with semi-wet concrete of the same character as is used in making the tile and this is securely tamped down so that when it has hardened it will correspond in appearance and quality to the tiles themselves and practically will be indistinguishable therefrom. If a wooden floor is desired strips of wood are placed between the upper ends of the tiles to receive nails or other means for holding the floor boards in place.

A finishing coat 21 may next be laid on top of the structure and a single coat will suffice as it will not be mottled or discolored to any appreciable extent by the moisture from the chambers as in previous constructions where the chambers were filled with wet puddle concrete. A similar finishing coat 22 may be applied underneath the structure and one coating will be sufficient at this point also as the exit of water in any amount will be prevented by the close and deep engagement between the lower ends of the tile. By providing base flanges of substantial area in cross-section I make receptacles for the wet puddle concrete of the

joists which are strong and close-fitting to prevent leakage, and which brace the tiles effectively in place.

It may be noted that the spaces at 15 form keys directly opposite the lowermost reenforcing rods 19, these keys strengthening the joint and holding the tile against any tendency to fall out of place, in which function they are assisted by the shoulders 23. Any kind of finishing mortar or cement may be used and thus as it hardens and crystallizes will become permanently united to the tiles and the joists because of their composition.

It will be obvious to those skilled in the art that my device may be changed in various respects without departing from the spirit of the invention and therefore I do not limit myself to what is shown in the drawings and described in the specification but only as indicated in the appended claims.

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

1. A tile structure comprising a plurality of tiles of porous concrete, adjacent tiles having abutting extensions at their lower edges and forming a pocket, a poured joist in said pocket formed of concrete of a less degree of porosity than the tiles, and a topping for said joist terminating substantially flush with the upper surface of the tiles, said topping comprising material of substantially the same degree of porosity as said tiles, said tiles and topping being adapted to receive a finish coat, substantially as set forth.

2. A tile floor and roof construction comprising a plurality of rows of tiles formed of porous concrete, the tiles of adjacent rows having lateral extensions at their lower edges disposed in abutting relation and forming a pocket between the adjacent rows, re-inforcing rods extending longitudinally of said pocket, a poured concrete joist in said pocket around said rods, the material forming said joist being of a different degree of porosity than the tiles and terminating below the upper surface of the tiles, a topping for said joist terminating substantially flush with the upper surface of the tiles, said topping comprising material of substantially the same degree of porosity as the tiles and adapted to form a uniform surface with the tile, and a finish coat covering the surface of said tile structure, substantially as set forth.

In witness whereof, I have hereunto set my hand at Indianapolis, Indiana this 29th day of July, A. D. nineteen hundred and twenty-four.

FRANK E. PETERS.