Aug. 4, 1936. E. B. GATES 2,050,001

METHOD OF LAYING TILE FLOORS

Filed Feb. 8, 1936

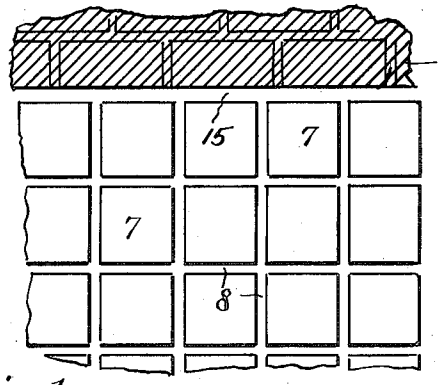


Fig. 1.

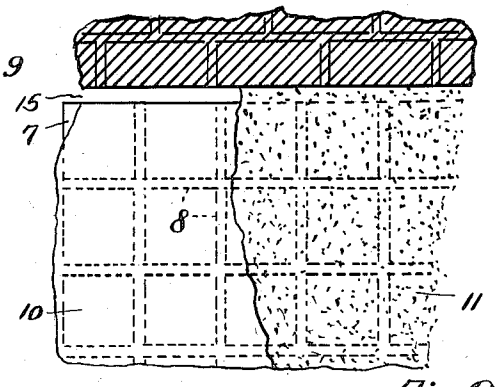


Fig. 2.

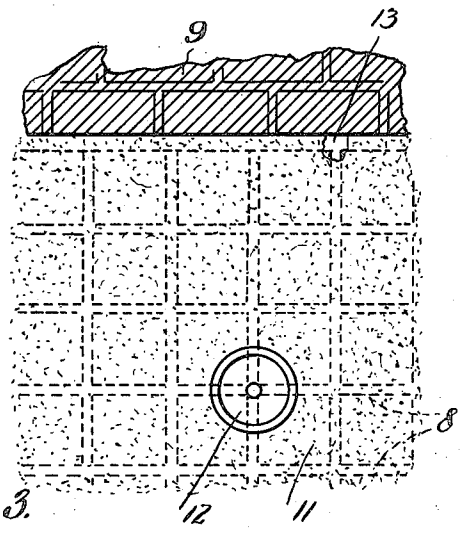


Fig. 3.

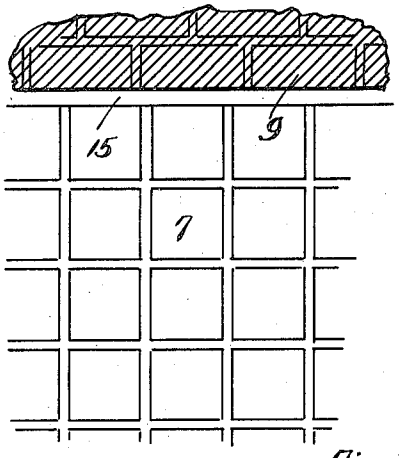


Fig. 4.

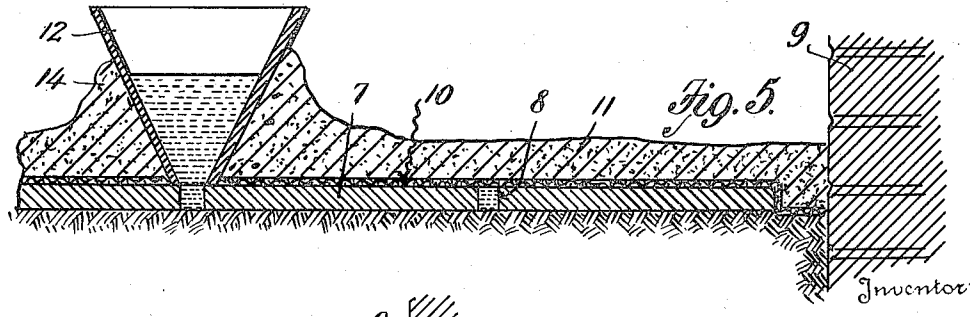


Fig. 5.

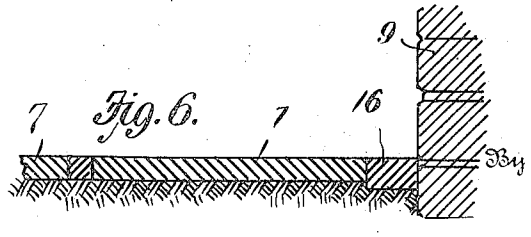


Fig. 6.

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METHOD OF LAYING TILE FLOORS

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6 Claims. (Cl. 94—22)

The present invention is a method of laying tile floors, having particular reference to what are familiarly termed acid proof and "sanitary floors" such as are required in food, dairy houses, chemical plants, sewers, floors around pickling tanks, etc.

The present invention has particular reference to and is an improvement upon the method fully set forth in the patent to Edwin B. Gates, No. 1,985,159, dated December 18, 1934.

While the method described in my former patent is satisfactory in most respects, it has been found that in the practice of the method therein set forth porosity of the joints frequently occurs, detracting from the appearance of the floor and affording opportunity for the accumulation of bacteria. It therefore was necessary in the practice of that method to treat the joints after the sand and cover were removed, so as to eliminate the pin holes causing the pores created by insufficient venting of trapped air during the joint pouring process.

By the use of the present improved method the joints are poured and venting of the entrapped air occurs immediately and evenly, thus enabling the fluent bonding material to readily pass into the various channels and to quickly dispel the air entrapped therein and to leave a smooth joint surface free of all pin holes or bubbels which have heretofore been found objectionable and tedious to eliminate.

The improved method for obtaining these results is more fully hereinafter described, reference being had to the attached drawing, wherein:

Fig. 1 is a plan view of a comparatively small section of a floor space and adjoining wall and showing an arrangement of tiles therein,

Fig. 2 is a similar view showing parts of the second and third steps of the improved process,

Fig. 3 is a similar view showing a completion of the third step of the process and preparatory to pouring of the joints,

Fig. 4 is a similar view showing the floor after the pouring process,

Fig. 5 is an enlarged transverse sectional view taken through a portion of the floor and wall and illustrating the pouring process in operation, and

Fig. 6 is a similar view showing the appearance of the floor after the process is completed.

In carrying out the process, the bed or foundation upon which the floor is to be laid is smoothed and leveled off or graded to drain from wall to wall of the structure, and the bodies or tiles 7 are placed upon the bed in such relation that channels 8 are formed between the several tiles. The distance between the tiles will be governed by the width of channel required but care must be taken that channels of the proper width be provided between all of the several tiles so that all of said channels will be intercommunicating. It is preferred that those tiles next adjacent to the walls 9 of the building be spaced therefrom a substantial distance, this distance depending largely upon the total floor area of the building. The purpose of this space, when its use may be found desirable, will be pointed out hereinafter.

With the tiles thus placed upon the bed, the various channels 8 are covered to provide intercommunicating closed conduits, this being effected in the present instance by placing over the tiles a sheet of open mesh fabric 10. This sheet is preferably of such character as to possess absorptive properties and to permit free venting of air or gases trapped in the channels. For this purpose, unbleached muslin, cheese cloth, loosely woven wool or open mesh canvas will be found effective, while perforated paper may suffice if the perforations are sufficiently close. The marginal portions of the sheet are shaped around the extreme outer edges of the marginal tiles so as to protect such edges, whereupon the edges of the sheet or cover are bent down into the floor bed across the space between the marginal tiles and the walls. The cover thus laid is weighted down, this being most practically effected by covering the sheet material with either moist or dry sand indicated at 11. The tiling thus laid and covered is now ready for the pouring material, sufficient to at least fill all of the intercommunicating channels, which is poured into one of these channels. In accomplishing this result, it is preferred that the pouring material be introduced at intersecting channels substantially remote from the edge tiles of the floor. To facilitate the pouring operation, a cup or funnel 12 is applied to intersecting channels by clearing away the sand and cover sheet immediately above the point of such intersection. Sand may then be packed around the funnel so as to hold the same properly in position, whereupon the hot fluent bonding material is introduced to the funnel. This material immediately flows through the intersecting channels in all directions forcing out all air or gases that might tend to pocket therein through the open mesh of the covering 10. The weighted covering limits the filling of the channel. If desired, additional

venting may be effected by removing the sand and breaking the covering at a point such as is represented at 13 in Figure 2.

When the channels have been filled, the cup is filled nearly to its top with the fluent bonding material, and the pressure thus produced maintains the various channels properly filled and compensates for contraction in the bonding material incident to its cooling. This insures an even filling of all joints up to and flush with the top surface of the various tiles.

After cooling, the cup is removed and the sand and cover sheet taken away, after which the space 15 between the edge tiles and the wall 9 may be cleaned out and filled with a packing material as represented at 16. This material constitutes an expansion joint to compensate for creeping of the floor incident to varying temperatures.

In many instances it will be found that all joints of a floor of given area may be poured at one operation, while floors of a larger area may require the use of several pouring cups in order that a proper distribution of the fluent bonding material may be made. If the pouring operations are carried out simultaneously, the fluent materials from the several cups will meet and bond with each other.

In the present instance there are shown tiles of square or rectangular formation, but it will be understood that the tiles may take other regular or irregular shapes, as desired, so long as the spaces or channels between the various tiles remain continuous or uninterrupted.

It has been found that by providing a covering of a porous and absorptive material the surface of the bond in the channels will set smooth and will be free of pin holes or other interstices or other depressions which have proven objectionable in methods herebefore employed. The method here employed obviates the necessity of after treatment of the joints, as the surface sets smooth and uninterrupted. As in my former method, it will be understood that the gravity method of pouring need not be adhered to, as other means may as effectively be used for introducing the fluent bonding material to one or more channel intersections of the tile layout. In the claims the term "body" is used to indicate the tile, and it will be understood that such term not only includes tiles of refractory material but also includes blocks, slabs or bricks of other characters.

Having thus described my invention, I claim:

1. The method of laying a floor comprising the arrangement of separate bodies on a foundation with regularly spaced intercommunicating channels between them, covering said channels with a porous sheet of material, and introducing a fluent bonding material to said channels.

2. The method of laying a floor comprising the arrangement of separate bodies on a foundation to provide intercommunicating channels between them, covering said channels with a sheet of porous and absorptive material, and pouring into one of the channels a quantity of fluent bonding material sufficient to fill all of the channels.

3. The method of laying tiling or the like comprising arranging separate bodies upon a foundation with the bodies separated by intercommunicating channels, converting said channels into temporary intercommunicating conduits by superposing on the bodies a temporary sheet like cover of porous material so arranged as to extend across said channels, causing a fluent bonding material to flow through said conduits and to fill said channels to a uniform level and removing said cover after said level has been reached.

4. The method of laying tiling or the like, comprising arranging separate bodies upon a foundation with the bodies separated by intercommunicating channels, converting said channels into temporary intercommunicating conduits by superposing on the bodies a temporary cover sheet of porous material so arranged as to extend across said channels, causing a fluent bonding material to flow through said conduits and to fill said channels to a uniform level by pouring a sufficient quantity thereof through one or more openings in said cover sheet, and removing said cover sheet after said spaces have been filled.

5. The method of laying tiling or the like, comprising arranging separate bodies upon a foundation with the bodies spaced by intercommunicating channels, converting said channels into temporary intercommunicating conduits by superposing on the bodies a temporary cover sheet of porous material so arranged as to extend across said channels, weighting said cover sheet so as to hold it in position, causing a fluent bonding material to flow through said conduits and to fill such channels to a uniform level by pouring a sufficient quantity in through one or more openings in said cover sheet, and removing the cover sheet and the weighting means after said channels have been filled.

6. The method of laying tiling or the like comprising providing a foundation with enclosing walls, arranging separate bodies upon said foundation with the bodies spaced by intercommunicating channels, the marginal bodies being spaced from said walls, converting said channels into temporary intercommunicating conduits by superposing on the bodies a temporary cover of porous and/or absorptive material so arranged as to bridge the channels and closing the outer ends of said conduits by folding the marginal edges of said cover downwardly over the outer edges of the marginal bodies and across the spaces interposed between the last mentioned bodies and the walls adjacent thereto, causing a fluent bonding material to flow through said conduits and to fill said channels to a uniform level by pouring a sufficient quantity thereof through one or more openings in said cover, removing said cover after said channels have been filled, and filling the space between the marginal bodies and said walls to a level even with the top surfaces of said bodies.

EDWIN B. GATES.