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TILE COATING APPARATUS.

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1,268,891.

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Fig. 1.

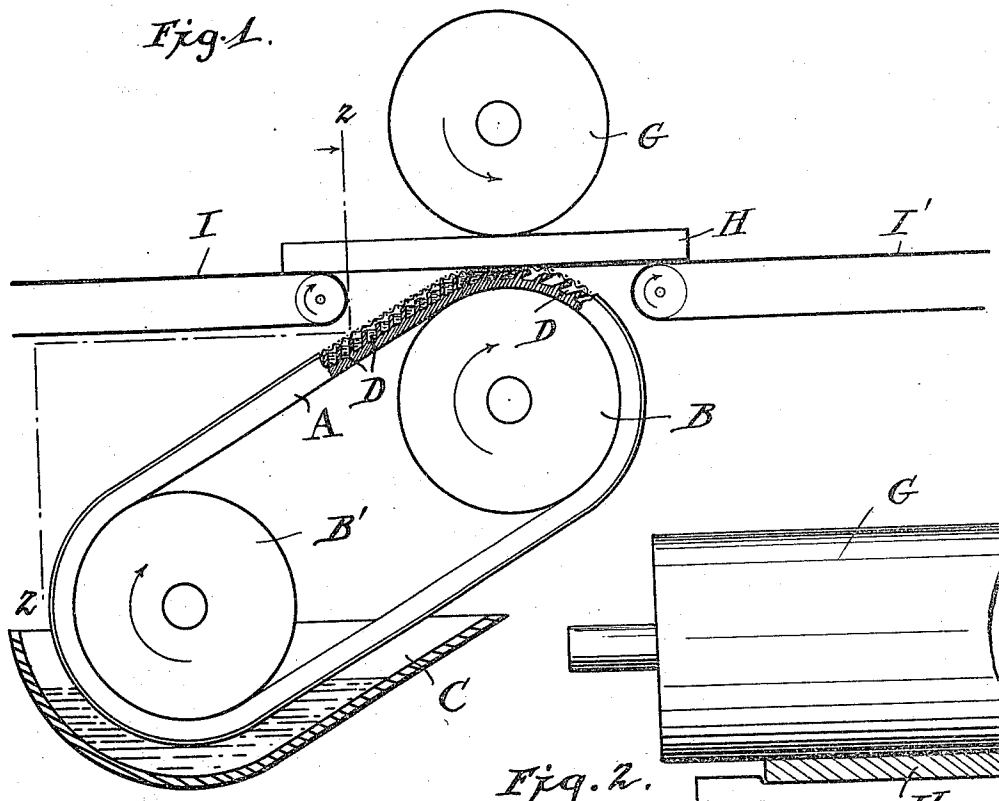


Fig. 2.

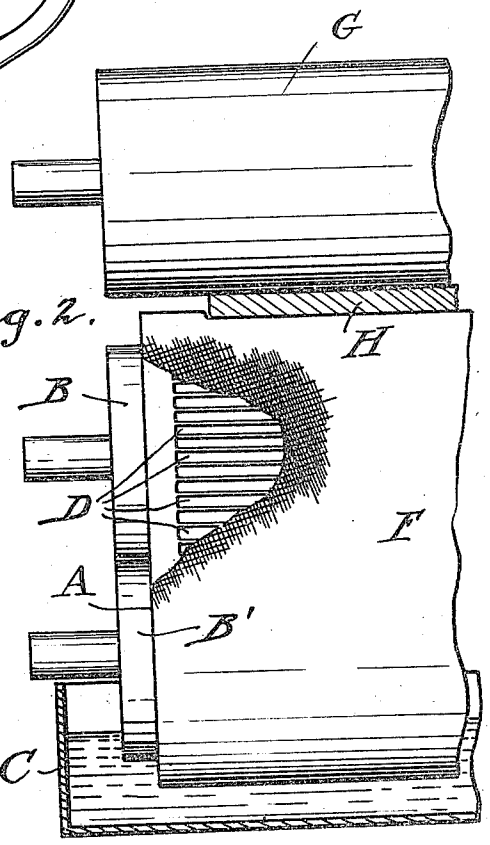
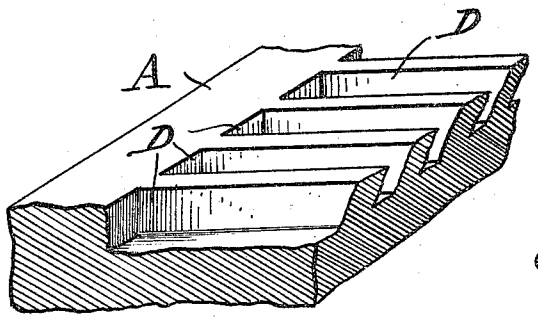


Fig. 3.



WITNESS

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TILE-COATING APPARATUS.

1,268,891. Specification of Letters Patent. Patented June 11, 1918.

Application filed October 20, 1916. Serial No. 126,656.

To all whom it may concern:

Be it known that I, HUGO STOMMEL, a citizen of the United States, residing at Red Bank, county of Monmouth, State of New Jersey, have invented a certain new and useful Tile-Coating Apparatus, of which the following is a specification.

This invention is a coating apparatus and more particularly an apparatus for applying a coating or covering to ceramic tiles. The object of the invention is to provide improved means for conveying the tiled coating solution from the source of supply to the coating point and applying said solution to the tile at such point.

Generally speaking, the invention embodies a conveyer member, a portion of which is immersed in a tile coating solution. The conveyer member is formed with a plurality of grooves or channels positioned side by side in parallel relation, and extending at right angles to the direction of movement of the conveyer member. The grooves or channels, when passed through the tile glazing solution, are charged with said solution, and convey it to the point of application. Means are provided at such point for advancing the tiles into contact with the conveyer member, and pressure means operates conjointly therewith to press the tiles tightly against the conveyer member. Those portions of the conveyer member, which are disposed intermediate the successive channels or grooves, are of a resilient nature so that, when the tile is pressed tightly against the conveyer member at the glaze applying point, the said intermediate portions, which come into engagement with the tile, are pressed or forced against one another thereby decreasing the size of the adjacent grooves or channels, and forcing the coating solution out of said channels and depositing the same upon the tile.

Features of the invention, other than those specified, will be apparent from the following description, when read in conjunction with the accompanying drawings.

The accompanying drawing illustrates one practical embodiment of the invention, but the construction therein shown is to be understood as illustrative only and not as defining the limits of the invention.

Figure 1 is a fragmental elevation partly in section, illustrating the manner in which a coating apparatus, embodying the present invention, operates when applying a tile glazing solution to a tile.

Fig. 2 is a section on line 2—2 of Fig. 1.

Fig. 3 is a fragmental perspective detail of the conveyer belt.

In said drawing, A designates an endless conveyer belt which is mounted for travel around a pair of rollers B B′, and is driven from either or both, as occasion may require. The conveyer belt is formed from flexible material, preferably rubber, and its exterior surface is provided with transverse grooves or channels D positioned side by side, in parallel relation and extending throughout the entire longitudinal length of the belt. The grooves D extend for the greater width of the belt, but terminate inwardly from the edges of the belt so that each groove forms, in effect, an elongated narrow pocket. The belt is thus formed with a very large number of such pockets positioned side by side. The pockets are positioned so closely together that the portions of the belt intermediate the successive pockets are comparatively thin walls which are in a measure flexible and resilient because of the particular character of the material from which the belt is formed. The sides of the grooves or channels D may be cut in perpendicular relation to the face of the belt, if desired, but are preferably cut obliquely thereto and in such direction that they are opposed to the direction of travel of the belt as clearly shown in Fig. 1. Rollers B and B′ are mounted on horizontal axes in different horizontal planes and at least a portion of the latter is submerged in the tile glazing solution contained in a trough or reservoir C. Thus, as the belt advances the grooves or channels are successively dipped below the surface of the solution and emerge therefrom charged with said solution. The continued travel of the belt moves the filled or loaded channels around the roller B′ and upwardly and over the roller B.

Positioned immediately above the roller B is a pressure roller G which is rotated in any suitable manner in a direction contrary to the rotation of the roller B and because of the conjoint operation of these two rollers, a tile H fed to said rollers is caused to advance between them with one

surface of said tile in engagement with the grooved surface of the conveyer belt. The tiles H may be either fed manually to the rollers G and B and manually removed therefrom or, as shown, such feeding and removing operations may be performed by endless aprons I I'.

The result of the foregoing construction is that when a tile is passed between the rollers G and B the pressure imposed upon the tile by the former roller causes the tile to be pressed down tightly upon the conveyer belt and such downward pressure of the tile compresses or forces together the thin walls between the successive transverse grooves of the belt, thereby squeezing out the contents of said grooves and depositing the same upon the tile. Manifestly, the amount of solution deposited upon the tile may be determined by the dimensions of the grooves as well as the force which the pressure roller G exerts upon the tile. Said latter force may be readily governed by any suitable form of adjusting device for varying the pressure of roller G.

If desired the construction thus far described may be employed as a complete device but in practice I preferably provide the conveyer belt with a covering of hair cloth F, generally formed by weaving horse-hair. I have found by experiment that tile glazing solution will not adhere to horse-hair, and consequently will not dry thereon in such manner as to fill up the pores or interstices between the warp and weft of the fabric. Moreover, the fabric thus formed is of such porous nature as to allow the tile glazing solution to readily enter the grooves from the reservoir during the charging operation and which solution may be equally, readily discharged through the pores of said fabric during the applying operation. The slippery or glossy characteristic of the fabric furthermore, causes the same to slide easily when in engagement with the tile and uniformly distribute the coating thereon. The hair cloth fabric may be readily cleaned, is very pliable and extremely durable.

In the foregoing description the invention has been described in its adaptation to a conveyer belt operated about a pair of spaced rollers. It will be understood however, that a single roller might be employed, the periphery of which roller is formed in the same manner as the outer face of the conveyer belt A, and a portion of which roller is submerged in a reservoir containing the tile coating solution.

The present invention is moreover, not limited to the use of hair cloth as other suitable porous material may be employed although the hair cloth is preferable since it operates with the greatest efficiency.

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

1. In a tile coating machine, a liquid conveyer member of flexible material, a portion of which is adapted to be immersed in a tile coating solution, said conveyer member being provided with grooves extending transversely of the direction of travel of said member whereby said grooves emerge from the tile coating solution charged with said solution and convey the same to the point of application to the tile, and a covering of hair-cloth over said conveyer member.

2. In a tile coating machine, a liquid conveyer member of flexible material, a portion of which is adapted to be immersed in a tile coating solution, said conveyer member being provided with grooves extending transversely of the direction of travel of said member whereby said grooves emerge from the tile coating solution charged with said solution and convey the same to the point of application to the tile, and pressure means for forcing a tile against the conveyer member for the purpose of squeezing the tile coating solution out of the grooves and depositing the same on the tile, and a hair cloth covering over the grooved surface of said conveyer member and through which the grooves are charged and discharged.

3. In a tile coating machine, a conveyer belt for the coating solution, a portion of which belt is adapted to be immersed in a body of said solution, and the exterior surface of which belt is provided with transverse undercut grooves positioned side by side and in parallel relation, which grooves become charged in passing through the tile coating solution and convey the same to its point of application to the tile.

4. In a tile coating machine, a conveyer member provided on its exterior face with depressed, under-cut pockets adapted to be charged with a tile coating solution from a a source of supply, and means for subsequently compressing said conveyer member for the purpose of squeezing the solution out of the under-cut pockets and depositing the same upon the tile.

5. In a tile coating machine, a liquid conveyer member of flexible material, a portion of which is adapted to be immersed in a tile coating solution, said conveyer member being provided with under-cut grooves extending transversely of the direction of travel of said member, whereby they emerge from the tile coating solution charged with said solution and convey the same to the point of application to the tile, and means for imparting pressure to the conveyer member at said point of applica-

tion, said grooves being positioned so closely together, side by side, that a relatively thin wall, which, in section, extends obliquely to the face of the conveyer member, is formed between each two successive grooves, said dividing walls being bent down and forced together by the pressure means to decrease the liquid-carrying capacity of the grooves for the purpose of squeezing the tile coating solution out of said grooves and depositing the same upon the tile.

In testimony whereof I have signed my name to this specification.

HUGO STOMMEL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."