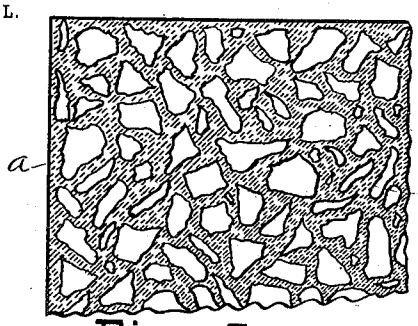
No. 719,244. PATENTED JAN. 27, 1903.

T. H. MOONEY.

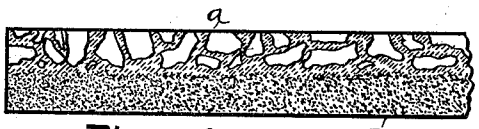
PROCESS OF MAKING MOSAIC TILE.

APPLICATION FILED JUNE 7, 1902.

NO MODEL.

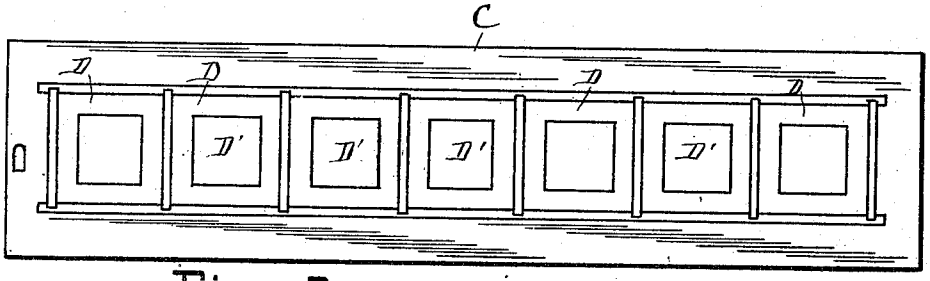


-Fig-3-



-Fig-4-

-Fig-1-



-Fig-2-

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PROCESS OF MAKING MOSAIC TILE.

SPECIFICATION forming part of Letters Patent No. 719,244, dated January 27, 1903.

Application filed June 7, 1902. Serial No. 110,567. (No specimens.)

To all whom it may concern:

Be it known that I, THOMAS H. MOONEY, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Processes of Making Mosaic Tile; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to a new and useful process for making mosaic tile. Heretofore this character of tiling has been made by compression, the particles of marble and the cement being mixed together and placed in molds. This manner of making tile has been found objectionable, owing to the fact that the tile so compressed could not be made solid or free from a porous nature, or, in other words, the particles or pieces of marble being of different sizes the larger pieces would prevent the platen or ram-block from having an equal pressure upon the material throughout. The result of this is apparent. Any particles of marble and cement lying below a larger or higher particle of marble would fail to receive any compression, the larger piece or pieces of marble acting as a limit to the compression or movement of the platen or ram-block. The consequence of this was that in a slab of tiling more or less of that portion below the larger or higher particles of marble would be open or but partly filled with cement and not of a solidified nature. Should it be attempted to obtain a uniform compression, the higher or larger particles of marble would be crushed. This would destroy the utility of the tile, for the reason that when the face of the tile is ground or given its smooth surface the particles of marble so crushed from the larger pieces would be loose in the tile, consequently would fall out and leave openings in the body of the tile.

In making tiling by compression the material is necessarily mixed dry—that is to say, a very small portion of water is added to the cement and particles of marble. This is essential, owing to the fact that the material in a plastic or semiliquid state could not be treated successfully by compression.

To obviate the difficulties met with in the manufacture of tiling under compression, some of which have been briefly outlined above, is the object of the present invention.

In constructing tiling by my process the material is treated in a semiliquid form, which is a great advantage, from the fact that the cement is permitted to readily enter all crevices between the particles of marble, filling up all pores and imparting to the product a solidified nature that makes it one integral piece. Tiling so constructed has a uniformity of compactness throughout.

In the accompanying drawings I have shown a machine comprising a set of seven molds, by means of which my process may be carried out. The number of molds may of course be greater or less.

Figure 1 is a side elevation of the machine. Fig. 2 is a top plan view. Fig. 3 is a view of a portion of a tile constructed in accordance with my process. The surface shown therein is the face of the tile. Fig. 4 is an edge view of a tile made in accordance with my process, in which the backing, composed of cement and sand, and the facing, composed of particles of marble and cement, are clearly distinguishable, and at the same time the tile is shown in one solidified and integral piece.

My process is performed as follows: The material to form the face of the tile—namely, particles of marble and cement—are prepared in a plastic or semiliquid state, the proportions being about as follows: two parts marble to one of cement. The material thus formed is placed in the molds, the thickness of said material when placed in the molds being preferably about one-half the desired thickness of the tile. For example, if it is desired to make the finished tile an inch thick the amount of material placed in the molds should be one-half an inch thick. When the molds are thus supplied with the necessary material, the machine in which the molds are supported is put under power and is given a constant series of quick vibrations. This initial movement of the molds in the formation of the tile is necessarily quick or is faster than the subsequent movement, which will be presently described. Said quick vibrations of

said molds are for the purpose of causing the particles of marble and cement to properly and uniformly spread over the bottom of the molds, during which operation the surplus water rises to the top and the particles of marble and cement gravitate to the bottom and form the face of the tile. During these quick and constant vibrations of the molds the particles of marble and the cement set—that is to say, the cement being of semiliquid form will fill up all the crevices and pores between the particles of marble. The period of quick vibrations of the molds is necessarially from three to five minutes. At the termination of such period the cement is thoroughly set around the atoms or particles of marble. At the end of this period of quick vibrations the machine containing the molds is changed to a slower movement—that is to say, a much slower and constant vibratory movement is given said mold—and the remaining half-inch depth of the mold is filled with sand and cement in a semiliquid form and of the following proportions: two parts sand and one part cement. This forms a rough backing for the tile. The purpose of the slow movement of the molds is to solidify the backing and cause it to unite with the marble and cement, so that the whole will constitute one solid integral mass. The subsequent slower vibrations of the molds are essential in carrying out my process in order that the mixture of sand and cement may properly set. It will be borne in mind that the addition of sand to the cement will weaken the inherent adhesive nature of the cement to some extent, while the addition of the particles of marble with cement will not have such an effect. It therefore becomes necessary to impart two degrees of vibrations to the molds in carrying out my process. The slower vibrations being necessary in order that the setting of the sand and cement, which is a slower process, may not be interrupted, and at the same time the surplus water will be caused to rise to the surface of the backing. This series of slower vibrations is necessarily given for a period approximately from fifteen to twenty minutes. The machine is then stopped and the surplus water which has risen to the surface of the backing of the tile is swept off with a broom, brush, or other implement.

Referring to the drawings, *a* designates the facing of the tile, which, as before stated, consists of particles of marble and cement. *b* constitutes the backing, which consists of sand and cement. It will be observed that these different mixtures of material become so united in the tile as to be one solidified integral piece, each and every particle of marble being surrounded and incased in cement, while the rear side of the facing is inclosed by a compact mass, which forms the backing.

Referring to the machine through the instrumentality of which the process is carried out, the said machine is composed of two side frames, each of which consists of three feet A B A, the feet B extending below the feet A and forming the pivot upon which the machine is rocked. The upper ends of these side frames support a moldboard C, in which a series of molds D are arranged. Each of said molds has an opening in its bottom which is closed by a false bottom D′, which forms a portion of the bottom of each mold. These false bottoms D′ are elevated in any suitable manner to remove the finished tile from the molds. The rocking movement is imparted to the machine through a pitman E, which is actuated by an eccentric F, which may be on any suitable driving-shaft G. I have thus briefly referred to a type of machine through which the necessary vibrations may be imparted to the molds. The machine being not involved in the present invention, any further description is deemed unnecessary.

Having described my invention, I claim—

The herein-described process for making mosaic tile, which consists in placing a body of cement and particles of marble in a semiliquid form in a mold, in imparting to said mold a series of quick vibrations during which the particles of marble and the cement become united and the surplus water rises to the surface, in applying to the back of said cement and particles of marble, a body of cement and sand in semiliquid form, in imparting to the mold a subsequent series of slow vibrations during which the body of cement and sand becomes set and adheres to the back of the particles of marble and cement, and the surplus water is caused to rise to the surface of the cement and sand, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS H. MOONEY.

Witnesses:

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ROBT. R. NEVIN.