J. H. FRITZINGER.

METHOD OF PRODUCING BUILDING BLOCKS.

APPLICATION FILED FEB. 11, 1914.

1,293,076. Patented Feb. 4, 1919.

Fig. 1.

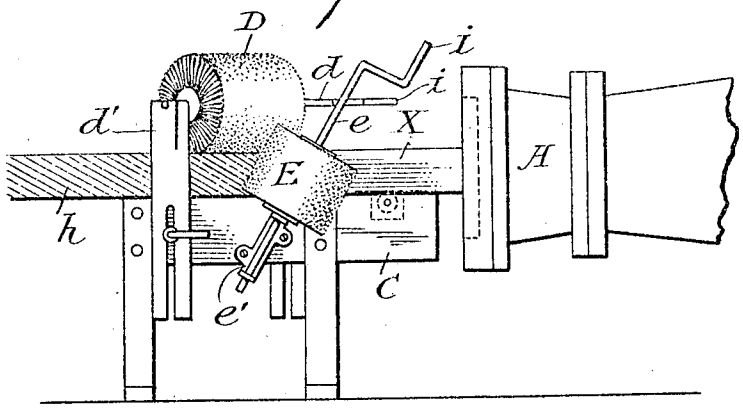


Fig. 2.

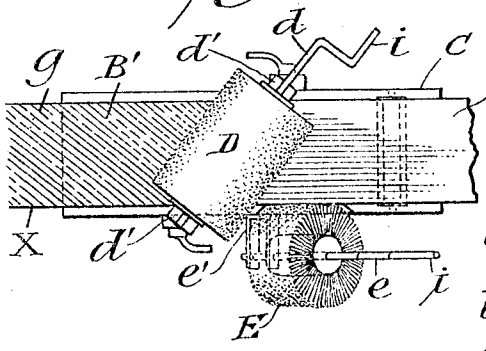
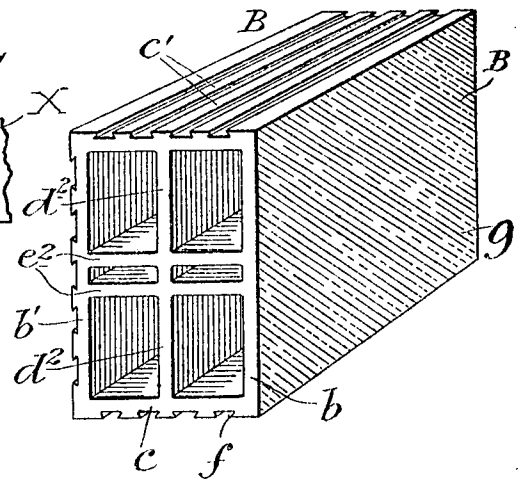


Fig. 3.



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METHOD OF PRODUCING BUILDING-BLOCKS.

1,293,076. Specification of Letters Patent. Patented Feb. 4, 1919.

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To all whom it may concern:

Be it known that I, JOHN H. FRITZINGER, a citizen of the United States, residing at Perth Amboy, county of Middlesex, and State of New Jersey, have invented a certain new and useful Method of Producing Building-Blocks, of which the following is a specification.

This invention is a method of producing a hollow tile block.

In the art of erecting buildings hollow tile blocks are now extensively used, more particularly in the construction of floors, but until recent years such blocks, owing to their rough and unfinished condition, have not been employed to any considerable extent in the construction of walls without imparting to the wall a surface finish both exteriorly and interiorly. The interior surface finish is usually a plaster coat applied directly to the wall, whereas it has been the practice in some instances to apply stucco as the exterior finish or to employ a thin brick veneer, so called, as such exterior finish. Such surface finishes add materially to the cost of construction, and in addition thereto, the stucco has been found unsatisfactory owing to a tendency to crack and peel off.

Owing to the advantages inherent in a wall composed of hollow tile blocks, such as the well known heat retaining and fireproof qualities, facility for ventilation, and for installation of electric wiring and various kinds of pipes, etc., there exists a demand in the trade for building blocks which, when laid in a wall, will have a desired finish and attractive appearance without resorting to the use of stucco, brick veneer, and other surface ornamentation usually employed by contractors and others.

The object of this invention is to produce a hollow tile block one or more surfaces of which are treated so as to impart thereto an attractive and artistic appearance so as to render the same available for use in walls without resorting to additional means for imparting a finish thereto.

A further object is to treat one or more surfaces of the block during the process of producing said block, thereby securing economy of manufacture.

To these ends, the process includes the step of scarifying one or more surfaces of the plastic clay material as it issues from the forming die and is delivered upon a table, usually the cutting table, said scarification of the surface or surfaces of the plastic clay material resulting in the formation of shallow grooves which may extend diagonally across the surface, or at right angles to the edges of the material or parallel to said edge. The shallow grooves are produced in the surface of the plastic material by suitable mechanical means, preferably by the action of a stiff wire brush which is rotated into contact with the surface as the material passes along the table.

Subsequent to scoring the surface of the material, the latter is cut transversely into sections of suitable length, and the block is formed or baked in the usual manner.

The article produced by this process is characterized by a surface possessing a finished appearance having certain artistic qualities which enable the blocks to be used in the construction of walls without requiring separate treatment, such as the application of stucco, to conceal the rough, irregular and objectionable appearance of ordinary tile blocks.

Figure 1 is a side view of so much of a tile forming machine as is necessary to an understanding of this invention, said figure illustrating two rotatable brushes in position for treating the top surface and one side surface of a column of plastic clay material as the same emerges from the forming die and travels along the table.

Fig. 2 is a plan view of the parts illustrated in Fig. 1, omitting the forming die.

Fig. 3 is a perspective view of a hollow tile, one surface of which is finished in accordance with this invention.

My invention can be carried out in any suitable form of machine, and, for the purpose of illustrating one of such machines, Fig. 1 shows a tile forming die A, the latter being constructed to form the plastic clay material, substantially as illustrated in Fig. 3. As is usual in the art, the clay is treated preliminarily in a pug mill and other machinery so as to reduce the same to the desired plastic condition suitable for working it in the forming die, and this clay material is forced mechanically through the die so that the clay material issues in a continuous

stream or column X from the die, the clay material having the desired form imparted thereto by the operation of said die. The form or shape of the clay material may conform to any of the standard constructions of hollow building tiles; as shown in Fig. 3 the tile B consists of side walls *b b'*, end walls *c c'*, webs d^2 c^2 extending at right angles to each other and within the side and end walls so as to produce longitudinal cells or spaces. Obviously, the number of partitions and corresponding cells will vary in the different tiles and, furthermore, the end walls and one side wall may be formed with the dove-tail grooves *f*. These grooves, however, are not an essential feature. It will be understood that the clay material forms the forming die with the walls, webs and grooves as shown in Fig. 3, but one or more surfaces of the clay material are left smooth and unfinished as such material emerges from the die. As shown, one side wall is minus the dove-tail grooves so that the surface of this wall may be subjected to the treatment of a rotary brush for the purpose of imparting the desired finish to said surface in accordance with this invention. It is apparent that the longitudinal dove-tail grooves may be omitted from the top surface of the clay material so that the top surface is also plain and unfinished as the clay material leaves the forming die, and thus the surfaces of the top and one side are adapted to be finished in accordance with this invention, the block with the two finished surfaces being especially adapted for use at the corner of a building.

The stream or column X of plastic clay material is supported on a suitable table C, the latter having its receiving end adjacent to the outlet of the forming die. This supporting table C may be of the usual or any preferred construction known to the art, and with this supporting table is associated means for cutting the column or stream of clay material into lengths suitable for the resulting tiles. As the construction of the supporting table and the cutting mechanism are well known to those skilled in the art, it is unnecessary to illustrate the same herein.

In Figs. 1 and 2 there are shown two rotatable brushes D E, the former being positioned for operation upon the top surface of the stream or column of plastic clay material, whereas the latter is at one side of the material X for treating the surface of a side wall of such clay material. Each brush embodies stiff wire bristles of suitable construction and arrangement for scarifying the surface of the clay material. Each brush performs two important functions, first, shallow grooves are cut into the surface of the clay material, and second, the surface of the clay material is so distributed as to eliminate slight irregularities produced therein by the forming die, whereby the surface of the resulting tile is finished to impart an artistic appearance thereto, substantially as shown at B' on the tile B of Fig. 3.

The brush D is provided with an arbor *d* which is journaled in suitable bearings provided in standards *d'*. These standards are fastened to a part of table C so that they are adapted to be raised or lowered or to be shifted to different positions, whereby the brush may be adjusted in a vertical direction to suit the different sizes of the clay material, or said brush may be positioned at different angles of inclination across the top surface of the stream or column of clay material. As shown in Figs. 1 and 2, brush D is inclined across the path of the rectilinearly movable column or stream of clay material, as it passes from the die and along the table, and said brush is adapted to be rotated by any suitable means for the purpose of having the bristles thereof gouge into the clay material at the top portion thereof for the purpose of scarifying the surface of said clay material, *i. e.* producing shallow grooves *g* diagonally in the surface of the material, said diagonal grooves *g* imparting the desired appearance and resulting in the artistic surface B' of the tile. Of course, the brush may be shifted to any desired position relative to the path of the clay material; the brush may be at right angles to the path of the clay material so as to produce the shallow grooves *g* in a direction lengthwise of the tile and parallel to the edges thereof, and, again, the brush may be shifted to any working position.

The side brush E is carried on an arbor *e* which is mounted in a frame *e'* secured adjustably to a part of table C. Said side brush is shown as occupying an inclined position across the path of movement for the column of clay material, and when this brush is rotated the bristles thereof treat a side surface of said clay material so as to gouge into it or scarify it by producing the diagonal grooves *h* on the surface of one of the side walls, see Fig. 1.

As shown, each brush is provided with a crank *i* for the purpose of rotating said brush by hand, but, obviously, other means may be employed for imparting rotary motion to the brushes. The brushes may be operated individually or if desired suitable power mechanism may be employed for rotating the brushes simultaneously.

In operation the prepared clay material is passed through forming die A and emerges in a continuous column or stream therefrom, the latter having the desired form and dimensions of the tile to be produced. The material travels in a rectilinear

path along table C and as it moves relative to brushes D E the latter are rotated for the purpose of bringing the bristles thereof into contact with the top surface and one side surface of the clay material. The brushes act to displace the clay material in a way to secure the two-fold function of producing the diagonal grooves in the surfaces of said material and to redistribute said material so as to eliminate irregularities in such surfaces of the material. It is apparent that the side brush may be adjusted away from the material X when it is desired to impart the artistic appearance to the top surface only, and, again, the upper brush D may be withdrawn from an operative relation to the material should it be desired to treat a side surface of the column or stream of clay material.

After a suitable length of material emerges from the die, the clay is cut transversely by suitable cutting mechanism so as to produce tiles of the desired length, and these tiles are then burned or baked in the usual way so as to harden them. Of course, the tiles may be subjected to any other or desired treatment.

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

In the art of producing hollow tile blocks with finished surfaces, the improvement which consists in scarifying the surface of plastic clay material upon the delivery thereof from a forming die by producing in such surface cuts extending diagonally of the block and simultaneously with the scarification distributing the material upon the surface intermediate said cuts whereby there is eliminated from the surface the irregularities produced by the action of the forming die.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN H. FRITZINGER.

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