C. H. BELLAMY.

MANUFACTURE OF TILES.

APPLICATION FILED APR. 6, 1909.

1,019,414. **Patented Mar. 5, 1912.**

Fig. 2.

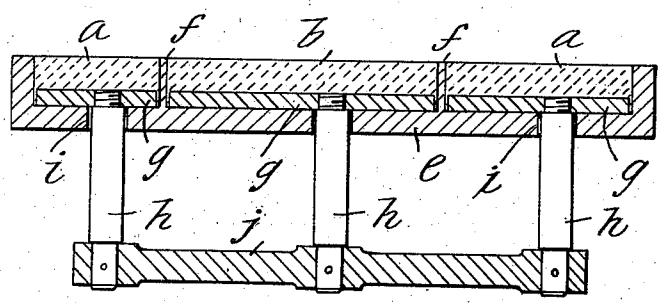


Fig. 1.

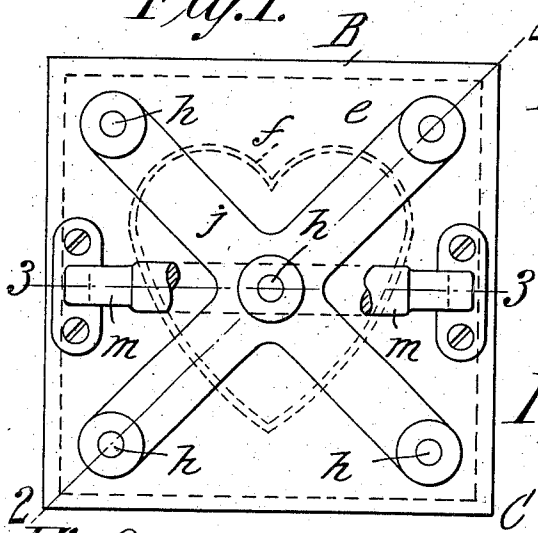


Fig. 7.

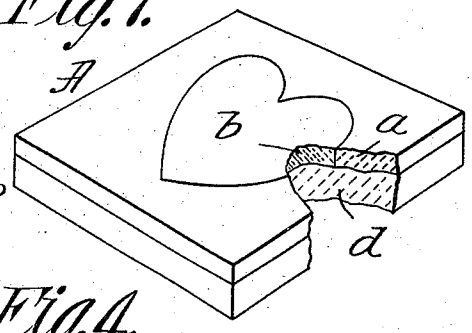


Fig. 4.

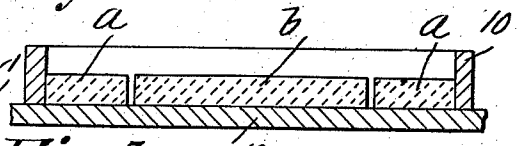


Fig. 3.

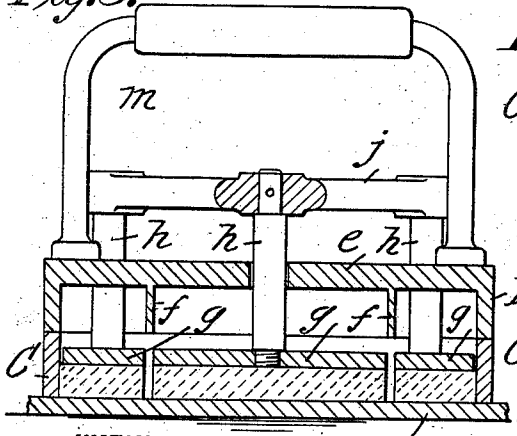


Fig. 5.

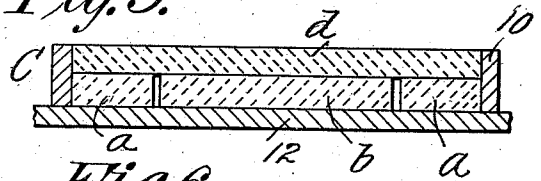
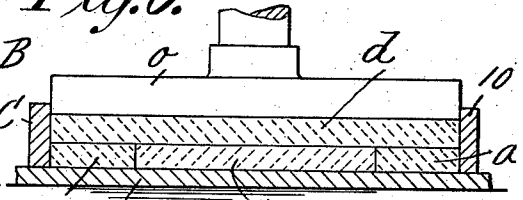


Fig. 6.



WITNESSES:

H. L. Sprague

P. M. Mowry

INVENTOR.

Charles H. Bellamy.

BY

ATTORNEY.

UNITED STATES PATENT OFFICE.

CHARLES H. BELLAMY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO CONCRETE & CLAY PRODUCTS COMPANY, A CORPORATION OF DELAWARE.

MANUFACTURE OF TILES.

1,019,414. Specification of Letters Patent. Patented Mar. 5, 1912.

Application filed April 6, 1909. Serial No. 488,279.

To all whom it may concern:

Be it known that I, CHARLES H. BELLAMY, a British subject, and resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in the Manufacture of Tiles, of which the following is a full, clear, and exact description.

This invention relates to improved ways and means for the production of tiles having designs in different colors at their faces and having their backs or bodies constituted by a cement or other suitable plastic material of an inferior or cheaper quality.

Special cementitious plastic compounds especially suitable for the making of the faces of tiles, owing to the expensiveness of the pigments employed, render tiles if constituted throughout their entire thicknesses of such plastic compounds, of unusually high cost; and it has become highly desirable to devise a practicable method for the comparatively rapid production of tiles which have facings of the different colored high-grade materials while the backs or bodies thereof are composed of inferior and much cheaper material.

In carrying out my invention I produce a tile face which is constituted by a plurality of contiguous face sections by molding plastic materials of different colors in a forming box having separate compartments, expelling the tile face sections from the forming box into a press mold, providing a plastic material of inferior quality in the press mold to constitute the tile back, and subjecting the superimposed materials in the press mold to pressure, thereby causing the contiguous edges of the tile face sections to become adjoined and united and the tile backing material to be connected with the variably colored tile face.

The accompanying drawings in conjunction with the following description will render the nature of this invention and the mode of carrying it out fully apparent; and in said drawings,—Figure 1 is a plan view of the back or bottom of the forming box employed for the production of the variably colored tile face; Fig. 2 is a sectional view on line 2—2, Fig. 1; Fig. 3 is a sectional view of the forming box shown as inverted, as taken on the line 3—3, Fig. 1, and with the movable plungers or diaphragms in their downwardly projected positions for the expulsion of the sections of plastic material, which constitute the tile face, from the forming box into the press mold, which latter is also shown in section; Fig. 4 is a sectional view through the press mold showing the tile face constituting sections in the bottom thereof; Fig. 5 is a similar view to Fig. 4, but showing the press mold filled with the body of plastic material for constituting the tile back; Fig. 6 is a view similar to Fig. 5, but showing the plunger of the press mold as in compression on the superimposed layers of plastic material for the completion of the tile. Fig. 7 is a perspective view to represent one example of a tile having a design of different colors and a back of the inferior material as produced under the exercise of this invention.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, Fig. 7, A is an example of a tile, the face layer of which comprises different areas of suitable forms or configurations and of different colors, as indicated at *a* and *b*, while the back *d* is constituted of a plastic material of an inferior and cheaper quality than the colored cements or other plastic materials from which the tile face is produced.

B represents the forming box in which the tile face is produced, and C represents the press mold into which the tile face constituting sections are transferred from the forming box and in which the tile back constituting plastic material is placed and subjected to pressure. The forming box B is made in the form of a shallow tray and is partitioned as indicated at *f* for dividing its interior into separated compartments; and rigid diaphragms or plungers individual to the respective compartments in the forming box are provided, the same having their positions in a coinciding plane within and removed from the open side of the box, and preferably normally against the base or bottom *e* of the box. Stems *h* are connected with the individual diaphragms, are extended through apertures *i* in the bottom of the forming box, and are rigidly

united by a frame or bar *j* whereby the several diaphragms may be simultaneously moved out from the respective compartments in the forming box to operate as ejectors.

The forming box has a rigid handle *m* for manually supporting it both in its position represented in Fig. 2 while receiving the differently colored cements in the separated compartments thereof and in the inverted position shown in Fig. 3 when the differently colored molded and formed tile face sections are being transferred into the press mold C. In the present instance the handle *m* is represented as of a bail shape; although this particular form of handle need not be adhered to.

The press mold C is indicated as constituted by a rectangular frame 10 resting on the flat horizontal base 12. The area of this frame corresponds with that of the forming box while the depth of the opening in the press mold is as great, or slightly greater, than the thickness of the tiles to be produced.

In the utilization of the apparatus for the making of a tile having a parti-colored face layer and a back of low grade cement, the forming box is, with its diaphragms fully withdrawn into the compartments, held in an upright position, and its compartments filled with the different colored cementitious plastic compounds as indicated in Fig. 2; the forming box is inverted and matched over and upon the press mold C and the separated but edgewise contiguous tile face constituting sections are expelled into the bottom portion of the press mold, as indicated in Fig. 3, appearing upon the withdrawal of the forming box as indicated in Fig. 4; the quantity of the low grade cement for constituting the tile back *d* is provided to more or less nearly fill the press mold, as indicated in Fig. 5, and then, by the powerful pressure exerted through the plunger *o* upon the superimposed layers of plastic materials in the press mold, the contiguous edges of the tile face sections become adjoined and united and the tile backing material connected with the variably colored tile face, as indicated by Fig. 6.

I am aware that it has been heretofore proposed to make a tile with a parti-colored face and inferior back by the employment of but one forming box or mold, it having been necessary to partially fill the mold with the cement of different colors, and then further fill the same mold with a low grade backing cement, but by this plan considerable skill and care is required to provide in the mold approximately the right quantities of the different colored cements, and to level them in their respective compartments could only be performed slowly and attended by more or less difficulty; but, as manifest, by employing a forming-box having a shallowness corresponding to the comparatively slight thickness of the tile face the filling in the separated compartments of the forming box with the differently colored cements and the ease with which the latter may be leveled off flush with the top edges of the forming box, are factors which for convenience and swiftness of operations and the uniformity of results are very appreciable.

I claim:—

The method of making tiles with faces of different colored materials which consists in producing a plurality of contiguous face sections by molding plastic materials of different colors in a forming-box having separated compartments, expelling the tile face sections from the forming box into a press mold, providing a plastic material in the press mold to constitute the tile back and subjecting the materials in the press mold to pressure thereby causing the contiguous edges of the tile face sections to become adjoined and united and the tile backing material to be connected with the variably colored tile face.

Signed by me at Philadelphia, Pa., in presence of two subscribing witnesses.

CHARLES H. BELLAMY.

Witnesses:
WM. D. NEES,
HARLEY BELLAMY.