

(No Model.)

C. C. GILMAN.
PAVING TILE.

No. 532,728.

Patented Jan. 15, 1895.

Fig. 1

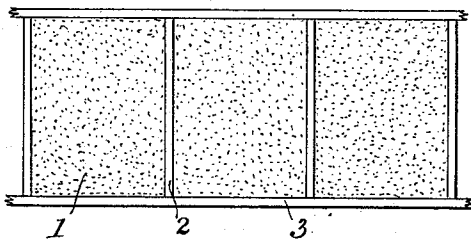


Fig. 2

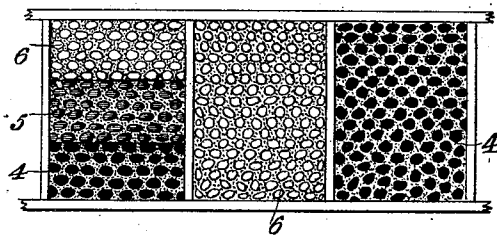


Fig. 3

Fig. 4

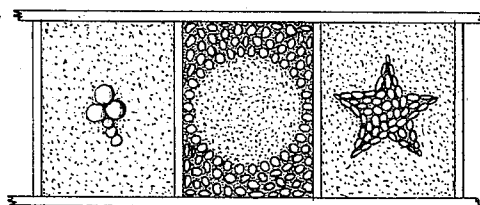
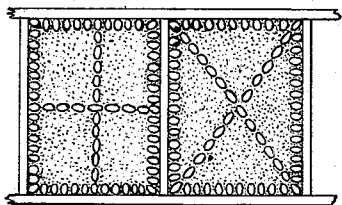


Fig. 8

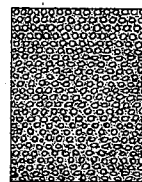


Fig. 5

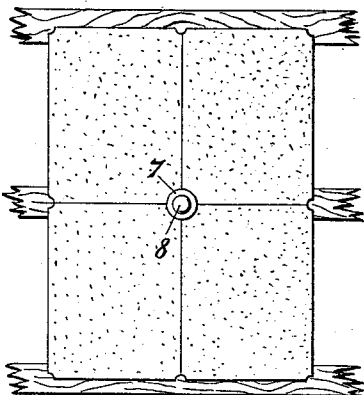


Fig. 6

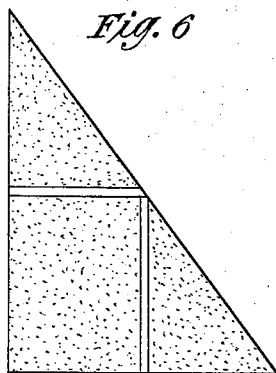


Fig. 7

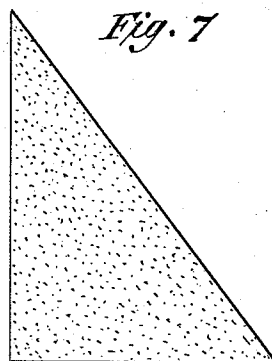


Fig. 9



Fig. 10



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UNITED STATES PATENT OFFICE.

CHARLES CARROLL GILMAN, OF ELDORA, IOWA.

PAVING-TILE.

SPECIFICATION forming part of Letters Patent No. 532,728, dated January 15, 1895.

Application filed June 30, 1893. Serial No. 479,227. (No specimens.)

To all whom it may concern:

Be it known that I, CHARLES CARROLL GILMAN, a citizen of the United States, and a resident of Eldora, in the county of Hardin and State of Iowa, have invented certain new and useful Improvements in Decorated Wall-Facings and Processes of Producing the Same, of which the following is a specification.

My invention relates to decorated wall facings.

The object of my invention is to produce a building block or slab provided with a decorative face, and I accomplish this object by the means hereinafter described and claimed.

In the accompanying drawings forming part of this specification Figure 1 represents the foundation blocks or slabs that form the foundation of the decorated wall facings. Figs. 2, 3 and 4 illustrate different styles of designs for the facings. Fig. 5 illustrates how one nail or washer will hold the four adjacent corners of four sheets. Figs. 6 and 7 represent respectively the rear and face of several blocks laid together. Fig. 8 represents a modification of the invention illustrated in Figs. 1 to 4. Figs. 9 and 10 represent respectively cross-sections of Figs. 2 and 8.

The material which I use for the foundation to which I attach the superficial facings are commercially known as porous earthenwares, and of their various kinds the one best suited to my purpose is known as fibrous brickware, described in my United States Patent No. 405,028, dated June 11, 1889. This ware may be made in the form of hollow blocks and laid up in masonry walls, with mortared joints; or it may be used in the form of thin sheets and fastened by nailing or otherwise to the frames of wooden buildings, inside or outside, the facing being applied before placing the block or slab in position. By reason of the porosity of the earthenware material used it not only permanently anchors the plastic covering, but supplies an indestructible non-conducting wall lining, after erection when the mortar, shall have been converted to stone.

In carrying out my invention I take for example, sheets 1 of fibrous brickware one and one-half inches in thickness, twelve inches in width and of a length sufficient to span spaces, from center to center, between posts, joists, or studding, say sixteen inches, and immerse

them in water, one by one, sufficiently long to nearly but not wholly saturate them, the marked decrease in number of escaping air bubbles indicating the proper time for withdrawal. No more of these sheets in number should be soaked at a single time than may be needed for use the same day. Now place flatwise upon a long table, of the usual height and width of a carpenter's work bench, a row of these wet sheets near each side thereof placing their concave surfaces downward if they are not perfectly straight. Between the rows of sheets, forming a space about eighteen inches wide, pile up the stones which may have been selected and sorted for use that they may be conveniently reached by the workmen on either side. Now separate the sheets singly from each other by smoothly dressed pine sticks 2, two inches high by one inch wide, sawed off evenly in length, and inclose the outside ends of the sheets by fastening lengthwise on top of the table two pine scantlings 3, two inches high by four inches wide laid flatwise in such a way that they may be easily pulled off when it is desired to remove the slabs. (See Fig. 1.) These partitions and scantlings serve as gages to gage the thickness of the mortared faces and preserve their edges square with the sheets to which they are attached. If white pine cannot be had for partitions and scantlings some other wood must be used which will become slippery by water soaking, so that the mortar may not adhere thereto. A pair of workmen may now take position on each side of the table near the ends. One of each pair should be a designer or artist, while the other should be a mason or one handy with the trowel. They may be designated as A and B respectively.

A begins on the second block from the end and with the colored stones piled in front of him lays out one on the bricked sheet a design he has in mind, or drawn on paper for his guidance. When complete B transfers the pattern to sheet 1, and A moves to sheet 3 to repeat his work, in turn to be followed by B in a transfer to sheet 2 now empty. B plans no designs, but mechanically places the stones on his sheet precisely in the place they severally occupied on the transfer sheet, but as he does so, one after the other, he fastens them to place by bedding them in mor-

tar, which he throws on with a stone mason's pointed trowel, in small quantities at a time. After fixing the stone to place he puts one hand on it to hold it in place, and with the other trowels the mortar closely about it and above its center that, thus clasped, the stone may not in subsequent handling fall out. The fingers should also be used in working the mortar firmly about the stone, and down upon the sheet or slab. As the other stones are added in like manner care must be taken not to displace those already set.

The mortars are made of one volume of Portland cement and four of clean sharp sand. The latter must be cleaned by washing, as also must the stones to remove adhering dust from their surfaces. The mortars may be colored by adding to and mixing with the cement when dry and before the cement is added any of the various colored ochres, brown, red, yellow, &c., a pint of which to a half bushel of cement affords neutral tints, though German Portland cement requires more than that of English make.

In Fig. 2 I have shown different patterns covering the whole surface of the slabs, the stones employed being quite as large as geese eggs, their various colors of black, white and chocolate being designated by 4, 5 and 6 in Fig. 2. The design and colors admit of course of infinite combinations. Other agreeable effects can be obtained by covering the slab with a plain cement coating and having the design cover only a part of the surface, as illustrated in Fig. 3; or designs or figures may be attached to the slab, leaving remainder of slab bare of mortar in which case the porous ware faces must be weather proofed in manner hereinafter described. When work of this sort is performed wholesale enough tables should be provided to allow it to stand at least twelve hours before removal. At the end of this time remove the scantling pegged to the table and take off one sheet at a time of the treated wares and place snugly upon racks handy to be stored for at least thirty days before erection to place. As they are taken off a small piece of the coating should be removed from each corner with the trowel to make room for the adjustment of a washer or collar 7, which held by the head of a nail 8 driven at the meeting of every four corners, holds the slabs in place. (See Fig. 5)

An examination made of the wares at the end of thirty days shows the cement mortar to have become "beton" or artificial stone adhering with such tenacity to the porous wares that the latter cannot be detached, and tightly clutching the stones or other extraneous matter lodged on the faces of the sheets.

Broken pottery, iron, glass, slag, spauls from marble and granite quarries, &c., may be also used with pleasing effect.

If the brickwares are fully saturated they lose their power of suction on the mortar, and still if not quite fully saturated the conditions necessary to cause the transformation

of the mortars to beton are not complete, for the water thus stored, affords the same conditions as given to hydraulic limes in water or wet ground, the strong capillary attraction exercised by the wares causing the water to evaporate from the uppermost surface, consequently passing through the cement coatings in making its escape as a vapor.

The weather proofing spoken of is given by brushing thoroughly the sheets after they are nailed to the wall with strong soap suds followed by a like application of a strong alum solution.

Referring now to a modification of my invention I arrange wet sheets or slabs of brickware in rows on tables as before but make the wooden gages an inch higher than the faces of the sheets instead of only half an inch as in the first instance. Now mix of Portland cement one part, sand screened through a No. 12 mesh, two parts, coarse gravel of not greater size than English walnuts and not smaller than filberts, all cleanly washed sufficient until the mixture is of the proper consistency for application. Of this pour from a bucket at one time sufficient to cover the slab evenly to the depth of an inch, and level the mass rapidly with a plastering trowel, using care in its manipulation to press the pebbly mortar down closely upon the slab and to level up squarely around the borders to the wooden gages. After standing a few hours the workman may by briskly handling a light wet brush remove the slop of mortar from the exposed faces of the pebbles without danger of disturbing their lodgment. At the end of twelve hours remove to drying racks, first trimming corners as directed in former case.

Of course after the brickwares shall have been faced with stone, trimming them to a given size is rendered impracticable, while on the contrary before such treatment, the wares may be sawed quite as easily as pine. The remedy therefore against any possible misfits, in erection, is to square the sheets at the start with a saw, to exact length of spaces between framing centers, which must also be set with an unusual degree of exactness. These instructions followed, little skill is required to erect the decorated sheets they simply being nailed in position as illustrated in Fig. 5.

When occasions require the covering of a large irregular space with a single covering may be accomplished, by laying a number of the brickware sheets on their faces and close together and marking and sawing out the design on their backs. (See Fig. 6.) Then spread half an inch of cement mortar evenly thereon and when the same has become stone turn the section, thus made of individual pieces, over and decorate the face. (See Fig. 7.)

When a full broadside of such work shall have been completed, finishing touches are to be given by "tucking" the joints between the sheets, with colored cement mortars, or the spaces may be hidden by filling them and

smearing over with mortar of the same hue; the steel washers, or nail heads having been countersunk below the surface to closely fit the depressed corners of the sheets, thus enabling their easy hiding by the mortar.

Having thus described my invention, what I claim, and desire to secure by United States Letters Patent, is—

1. A process of producing decorated building material which consists of nearly but not entirely saturating a sheet or block of porous earthenware with water, coating the same with mortar and applying to the mortar, while soft, suitable ornamental material, substantially in the manner and for the purpose specified.

2. A decorated building material, consisting of a foundation sheet or block of porous

earthenware, ornamental material and a coating of mortar mutually adherent to the earthenware and to the ornamental material, substantially as and for the purpose specified.

3. A decorated building material consisting of a foundation sheet or block of porous earthenware, a decorated facing of pieces of stone, or the like, and an intermediate mutually adherent Portland cement mortar, substantially as set forth.

Signed at Eldora, in the county of Hardin and State of Iowa, this 28th day of April, A. D. 1893.

CHARLES CARROLL GILMAN.

Witnesses:

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JAMES L. WILLIAMS.