

J. C. HENDERSON.
FACING ARTIFICIAL STONE.
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909,792.

Patented Jan. 12, 1909.

Fig. 1.

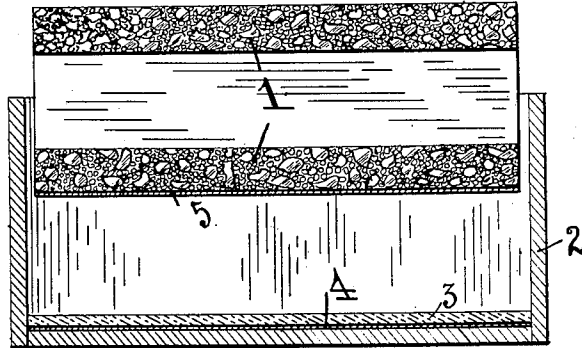


Fig. 2.

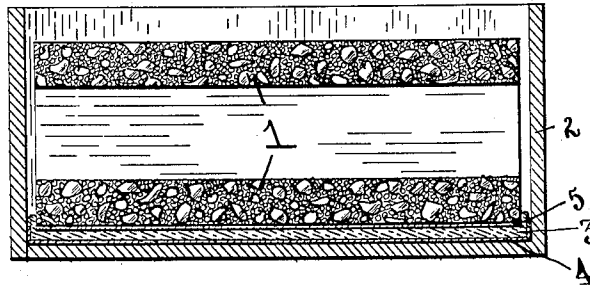
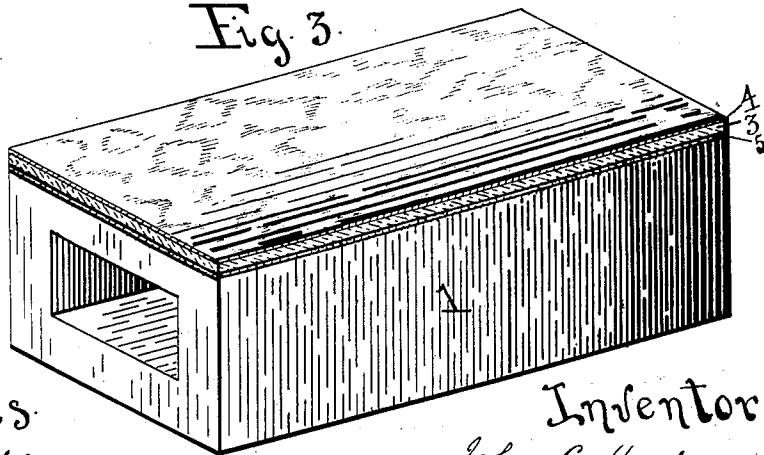


Fig. 3.



Witnesses
F. H. Holmes.
S. Constance.

Inventor.
John C. Henderson
by Wm. F. Booth
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UNITED STATES PATENT OFFICE.

JOHN C. HENDERSON, OF OAKLAND, CALIFORNIA, ASSIGNOR TO APOLLO ARTIFICIAL STONE COMPANY, OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF CALIFORNIA.

FACING ARTIFICIAL STONE.

No. 909,792.

Specification of Letters Patent.

Patented Jan. 12, 1909.

Application filed August 27, 1908. Serial No. 450,562.

To all whom it may concern:

Be it known that I, JOHN C. HENDERSON, a citizen of Great Britain, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Facing Artificial Stone, of which the following is a specification.

My invention relates generally to the manufacture of artificial stone, and particularly to methods and processes of facing the same.

As generally known and practiced, the facing of artificial stone masses, using Portland cement as a binder, is conducted in one of three ways, namely:—First, by working the face of the mass with dilute acid until enough of the Portland cement is eaten away to leave the mineral aggregate exposed. Second, by working the face of the mass with tools, in imitation of stone work. Third, by plastering the face of the mass. In cases where it is desirable to face the mass with a layer which is denser and different in color than the body of the mass, there is also a process of introducing into a mold, a semi-dry or semi-fluid layer, possibly colored to suit, and composed of a fine aggregate, and then tamping or pouring on this the body of the mass, the two being united before the initial set occurs in the facing. The faces of stones, so produced, are not as dense, nor as water proof, nor do they have as strong arris as natural building stones.

As distinguished from these methods, my invention consists essentially in pouring into a mold, a fluid aqueous mass of Portland cement, either neat or mixed with a fine aggregate, such as powdered marble-dust, silica, sand, etc., and such coloring matter as may be desired, and then before the initial set of said mass, lowering into it a previously manufactured mass or block of Portland cement concrete, and holding said block in place until the set of the underlying fluid aqueous mass occurs.

The accompanying drawing illustrates my process.

In this drawing—Figure 1 is a longitudinal section of a mold, showing the previously manufactured concrete block being lowered into it. Fig. 2 is a section showing the block in place in the mold. Fig. 3 is a perspective view of the finished block, the faced side being turned uppermost.

In carrying out my process, I take a previously manufactured mass of Portland cement concrete 1. This may be a block of any shape, solid or cored out, and may be formed in any suitable mold, in the ordinary way. Its dimensions are smaller than the finished faced product is to be, by just the thickness of the facing which is to be applied to it. It may be of any age past that of the final set. If comparatively new, so that it still contains a quantity of the original moisture, its surface to be faced needs no treatment, such as I shall hereinafter mention, preparatory to receiving the facing mass. I now take a mold 2 of the dimensions the finished stone is to be, and lubricate the same. Then I prepare a fluid aqueous mass of cementitious material as follows. I take Portland cement, either neat or with the addition of powdered marble dust, silica, sand, etc., and suitable coloring matter if required, and mix it with water to an extremely liquid condition, say of about the consistency of milk of lime, so that it is quite fluid. I then pour this fluid aqueous mass into the mold as shown at 3; and before the initial set of said mass, I take the previously manufactured mass or block of Portland cement concrete and lower it down into the fluid aqueous mass, and hold it in place until the final set of said fluid mass occurs, whereupon the faced stone is removed from the mold and placed under cover from the weather for curing. In thus lowering the block into the fluid aqueous mass, the latter is forced into contact with the face or faces of the block and fills all space between the mold and block. It will be readily seen that I can face one or more sides of the block. If it be desired to vein the face of the stone in any manner to produce ornamental effects, or in imitation of marble, for example, I make a veining material from Portland cement and color and water, making said material of a little thicker consistency than that of the fluid aqueous mass heretofore described. This veining material I spread in a thin layer in the bottom of the mold as shown at 4, forming in it veins or cloud effects seen in natural marble. Then I gently pour the fluid aqueous mass of Portland cement into the mold, without disturbing the tracings or veins of the material used for veining effects, and I then lower the previously

manufactured block into said fluid aqueous mass and hold it there as described.

If the previously manufactured concrete block be old and dry, I prepare such surface 5 as is to be faced, before placing it in the mold, by washing it with a mixture of slightly thinner consistency of the described facing material as shown at 5.

By this process I am enabled to face a 10 previously manufactured mass or block of Portland cement concrete, whether it be a hollow building block, or a solid artificial stone, and I find that the fluid aqueous mass will flow into all molds, and ornamentations 15 that may be in the mold face.

By having the fluid aqueous mass of the proper consistency, the moisture in excess of that required for the set of the Portland cement is absorbed by the previously manu- 20 factured concrete mass thus leaving a dense and homogeneous face.

The previously manufactured mass of concrete may be made cheap and inexpensive by using the proportion of aggregate to Port- 25 land cement which the use of the mass may require, while the facing which I apply, may be made of more expensive cement and colored to suit the fancy.

It is possible for a manufacturer to carry 30 in stock, concrete blocks which have become strong through aging, so that quick delivery of the finished faced stone may be made. The semi-dry block, not only absorbs the excess of moisture from the fluid aqueous 35 mass used for the facing, but also takes away the excess of alkali, thus removing the cause of checking and cracking on the face. A finished stone is thus produced, solid or hollow, low in cost as to the body of the stone, 40 and high in strength as to the face and arris, and suitable for carving.

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

45 1. The improvement in facing artificial stone, which consists in forcing a previously manufactured set mass of Portland cement concrete into a fluid aqueous mass of cementitious material which is confined within a 50 mold, and holding said block in place until the final set of said fluid aqueous mass.

2. The improvement in facing artificial

stone, which consists in forcing a previously manufactured set mass of Portland cement concrete into a fluid aqueous mass of cementitious material which is confined within a 55 mold, and holding said block in place until the final set of said fluid aqueous mass, the surface of said concrete mass, previous to its insertion in the mold, having been washed 60 with a fluid aqueous mixture of cementitious material.

3. The improvement in facing artificial stone, which consists in first manufacturing a set block of Portland cement concrete; 65 then pouring into a mold, a fluid aqueous mass of cementitious material to form the facing; then, before the initial set of said fluid aqueous mass, forcing the previously manufactured block of concrete into said 70 mass; and holding said block in place until the final set of said fluid aqueous mass.

4. The improvement in facing artificial stone which consists in first manufacturing a set block of Portland cement concrete; 75 then washing its surface to be faced with a fluid aqueous mixture of cementitious material; then pouring into a mold a fluid aqueous mass of cementitious material to form the facing; then, before the initial set 80 of said fluid aqueous mass, forcing the previously manufactured block of concrete into said mass; and holding said block in place until the final set of said fluid aqueous mass.

5. The improvement in facing artificial 85 stone, which consists in first manufacturing a set block of Portland cement concrete, then veining in a mold a fluid aqueous thin coating of colored Portland cement; then pouring upon said veined coating, a fluid aqueous 90 mass of cementitious material; then before the initial set of said fluid aqueous mass, forcing the previously manufactured block of concrete into said mass; and holding said block in place until the final set of said fluid 95 aqueous mass.

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

JOHN C. HENDERSON.

Witnesses:

WM. F. BOOTH,
D. B. RICHARDS.