UNITED STATES PATENT OFFICE.

PIERRE AIGNAN MOREAU, OF MEUNG, FRANCE.

METHOD OF MAKING ARTIFICIAL MARBLE.

SPECIFICATION forming part of Letters Patent No. 525,024, dated August 28, 1894.

Original application filed July 18, 1892, Serial No. 440,401. Divided and this application filed September 2, 1893. Serial No. 484,663. (No specimens.) Patented in France July 15, 1889, No. 199,594, and August 12, 1892, No. 215,492; in England January 1, 1892, No. 50, October 28, 1892, No. 19,395, and November 11, 1892, No. 20,414; in Italy March 31, 1893, No. 33,637; in Spain May 20, 1893, No. 14,423; in Austria-Hungary August 26, 1893, No. 29,181 and No. 1,013, and in Belgium December 29, 1893, No. 102,738.

To all whom it may concern:

Be it known that I, PIERRE AIGNAN MOREAU, a citizen of France, residing at Meung, (Loiret,) France, have invented certain new and useful Improvements in Methods of Making Artificial Marble, (for which I have procured patents in France, No. 199,594, dated July 15, 1889, and No. 215,492, dated August 12, 1892; in England, No. 50, dated January 1, 1892, No. 19,395, dated October 28, 1892, and No. 20,414, dated November 11, 1892; in Belgium, No. 102,738, dated December 29, 1893; in Italy, No. 33,637, dated March 31, 1893; in Spain, No. 14,423, dated May 20, 1893; and in Austria-Hungary, No. 29,181 and 1,013, dated August 26, 1893;) and I do hereby 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.

The object of my invention is a process of making artificial marble which so resembles natural marble that it cannot be distinguished from it.

This application is a divisional part of an application filed by me on July 18, 1892, Serial No. 440,401.

For the purpose of my process I use white porous stone, preferably carbonate of lime, which I treat in the manner hereinafter described.

My process comprises three operations:—first, the veining; then coloring; and finally hardening the stone.

I will describe the operations in their order. To vein the stone I use varnish to which the desired coloring matter is added and I proceed in the following manner: I prepare a bath of cold water upon the surface of which I sprinkle a mixture of varnish and coloring matter by means of a brush. This colored varnish causes tints to appear upon the surface of the water, which may be arranged as desired by bringing them together or separating them with a stick. Then I plunge the stone in this bath and withdraw it immediately. Its surface is found to be adorned with veins of a color which has been mixed with the varnish. These veins are more or less deep, according to the thickness of the varnish, which is not equal upon the entire surface of the bath. Of course each surface of the stone must be veined. To accomplish this the stone must be turned in the bath or it must be withdrawn and the opposite surface colored as it was at first. The varnish penetrates into the stone and does not dry within four or five hours, according to the thickness of the coating. When the veins have been obtained as described, I proceed to color the stone, which is done by plunging it into coloring baths. For these coloring baths I use metallic colors such as sulphate of copper, sulphate of iron, or other similar products; as also vegetable colors or dyes. I prepare a series of baths of the colors I desire to give the stone. I leave the stone in the first bath a length of time varying according to the degree of penetration to be obtained. As soon as the stone leaves the first bath I place it in a second bath of different color, and so on until I obtain the desired result. The colors of the different baths do not interfere with one another and each penetrates farther and farther into the stone. When the final color has been obtained after the successive baths, I plunge the stone as soon as it leaves the last bath into a bath of hot water of a temperature of about 80° centigrade, where it is allowed to remain twenty or thirty minutes, after which the stone is dried. The hot water treatment and the drying has the effect of hardening the marble, after which the stone may be otherwise treated for hardening and polishing. An oven also may be used for drying the stone, but care must be taken to allow the stones to dry in the open air forty-eight hours before placing them in the oven.

What I claim, and desire to secure by Letters Patent, is—

1. The process of making artificial marble which consists of first floating on the surface of a water bath a mixture of varnish and coloring matter; second—mixing the same to produce any desired stratification of color; third—immersing a porous stone such as native chalk in said bath whereby the colored

varnish will partially cover the surface in veins or uneven lines; fourth—drying the stone thus coated; fifth—immersing the stone in a color solution whereby the unvarnished surfaces of the stone will absorb color from the color bath and the interior of the stone become unevenly colored; sixth—immersing the stone in a bath of sulphate of zinc to harden it, and finally in a bath of hot water, substantially as described.

2. The process of making artificial marble, which consists of first floating on the surface of a water bath a mixture of varnish and coloring matter; second—mixing the same to produce any desired stratification of color; third—immersing a porous stone such as native chalk in said bath whereby the colored varnish will partially cover the surface in veins or uneven lines; fourth—immersing the stone in a color solution whereby the unvarnished surfaces of the stone will absorb color from the color bath and the interior of the stone become unevenly colored; fifth—immersing the stone in a bath of sulphate of zinc to harden it, and finally in a bath of hot water, substantially as described.

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

PIERRE AIGNAN MOREAU.

Witnesses:

ROBT. M. HOOPER,

G. DE MESTRAL.