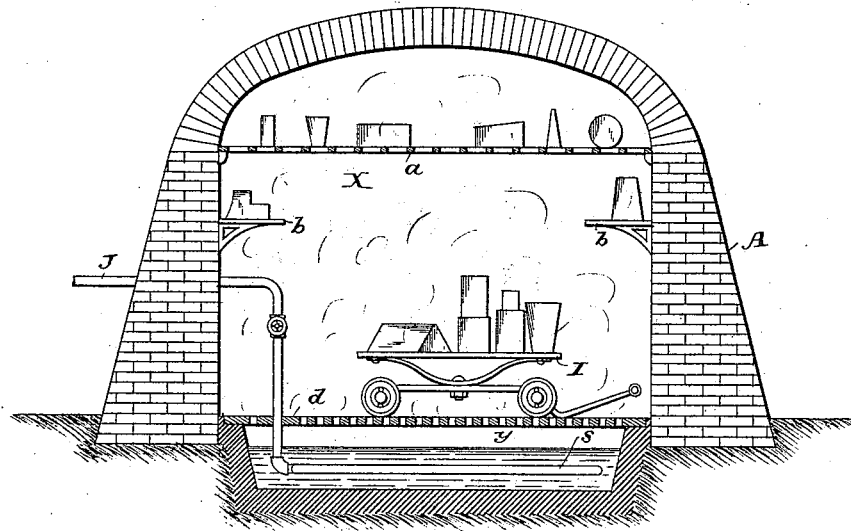


(No Model.)

H. A. DANIELS.
MANUFACTURE OF ARTIFICIAL STONE.

No. 346,736.

Patented Aug. 3, 1886.



Attest:
Court A. Cooper.
A. C. J. Farnemann.

Henry A. Daniels,
Inventor.
Wm. Foster Freeman
Atty.

UNITED STATES PATENT OFFICE.

HENRY A. DANIELS, OF YONKERS, NEW YORK.

MANUFACTURE OF ARTIFICIAL STONE.

SPECIFICATION forming part of Letters Patent No. 346,736, dated August 3, 1896.

Application filed January 29, 1886. Serial No. 190,195. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. DANIELS, a citizen of the United States, and a resident of Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in the Manufacture of Artificial Stone, of which the following is a specification.

In the manufacture of artificial-stone, it is common to mix together the ingredients and make them into a paste, which is then dried and hardened, a coloring material in some instances being added.

It has been found difficult to impart a crystalline structure to the stone and to secure the durability of the colors used in some instances; and my invention consists in means whereby to aid in securing a stone of a more crystalline character and of fixing the colors. To this end I mix, mold, or otherwise form and dry the material in the usual manner, employing such colors as may be necessary or desirable, and I then subject the blocks or pieces to the action of vapor which has been passed through a body of pulverized alum or which arises from a heated solution of alum. I have found that by thus treating the blocks or pieces of artificial stone with alum-vapors they can be crystallized in about twenty-four hours, whereas by the old process it takes from six to seven days, and they are at the same time rendered more durable, harder, and more crystalline in their structure, and that the colors are set and rendered permanent.

In the manufacture of the stone, I use any of the ingredients commonly employed, but more specially those set forth in Letters Patent issued to me, No. 297,971, in which glue is sometimes an ingredient; and I have found that by subjecting said composition to the action of vapor from alum, the above-described results are effected, and, furthermore, the glue is rendered more or less insoluble by the treatment.

Different apparatus may be employed for effecting the treatment. I prefer that illustrated in the accompanying drawing, in which is represented in vertical section a brick or stone work structure, A, preferably built of artificial stone, inclosing a chamber, X, within which are arranged gratings a, shelves b,

and other suitable supports for small articles to be treated. Below the chamber is a basin, y, which may be a metal basin, or may be of concrete and built in the foundation, above which is a perforated plate, d, constituting the floor of the chamber X, the said plate being perforated, and in the chamber y is a coil of pipe, s, with which communicates a steam-pipe, J. In the basin y is placed a strong solution of alum. Superheated steam is directed through the pipe J to the coil, and the blocks or articles of artificial stone are placed upon the shelves and grating, or, when too heavy to be thus supported, are carried into the chamber upon the truck I, and the chamber is then closed. The heat of the steam-coil vaporizes the contents of the basin, which rise through the perforated plate and permeate the articles within the chamber. The alum may be placed in the basin in a powdered or lump condition, and may be operated directly upon by the steam escaping through perforations in the coil, and in this case the receptacle for the alum may be a perforated case or grating, arranged at the top of the chamber X.

Although I have shown and described an apparatus which is effective for the purpose required, it will be evident that the form of the apparatus may be greatly changed without departing from the main features of my invention.

I claim—

1. The improvement described in the manufacture of artificial stone, the same consisting in subjecting articles formed of artificial-stone composition to the action of vapor arising from alum, substantially as set forth.

2. The combination, in a chamber containing articles made of artificial-stone composition, of a receptacle for alum, and means, substantially as described, of conducting vapor from the alum into the said chamber, for the purpose set forth.

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

HENRY A. DANIELS.

Witnesses:

T. W. COSBACHOR,
H. P. STAMFORD.