UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN ARTIFICIAL MONOLITHIC STRUCTURES.

Specification forming part of Letters Patent No. **88,546,** dated April 6, 1869.

To all whom it may concern:

Be it known that I, FRANÇOIS COIGNET, of the city of Paris, in the Department of the Seine and Empire of France, have invented certain Improvements in the Construction of Monolithic Structures; and I do hereby declare that the following is a full and exact description thereof, which will enable others skilled in the art to make and use the same.

This invention relates to the construction of buildings, dams, wharves, abutment-walls, bridges, &c., all of one piece of artificial stone, or of sections of the same joined together, the artificial stone being composed of sand, lime, and cement, prepared and agglomerated as described in my application for a patent for the same; and the present invention consists in the introduction into the molds of inside molds or cores, so as to obtain open spaces, cavities, flues, or, as it were, pipes, for the purpose of economizing the material employed for ventilating, warming, conveying water, gas, &c.

When I am building a dwelling-house, a church, a theater, or any other kind of structure of artificial stone, as the work progresses the inside and outside parts of the walls are shaped by suitable sections of molds kept apart and from spreading apart by proper bolts to give the thickness of said walls. Now, to obtain any flues in the thickness of said walls, I place cores of the proper shape and size in the desired position for the same, and the artificial-stone paste of appropriate character is agglomerated all around said cores, and as the cores are removed the wall is left perforated just in proportion as the cores are in number and size.

For the flues of chimneys for the conveyance of smoke a certain admixture of fire-clay may be produced in the artificial-stone paste employed near the core. For the pipes or flues intended to convey water or gas water-proof substances may be introduced; and for the ventilation and heating purpose, if the work is properly done, it is perfectly safe to dispense with the metallic casing ordinarily used for that purpose.

In building abutment-walls, wharves, docks, dams, locks, &c., when, for the purpose of resistance, a great bulk of masonry is required, as, when finished, the whole structure will be but one stone—a monolith, in fact—I am able to obtain greater resistance and strength by making the structure of greater dimension, and at the same time diminishing the expense, by making, by means of large cores, as above described, my walls hollow, full of perforations, niches, cells, flues, and hollows, which, by being filled with common earth pounded therein, go to make the weight required in the structure; and this system of building honeycombed monolithic structures filled with common earth will hold good as regards any works of art where the total weight of the masonry is a guarantee of the strength thereof.

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

1. In monolithic buildings made of agglomerated artificial-stone paste, the production of flues, pipes, or openings for the purpose of heating, ventilating, conveying water, gas, or smoke, &c., by means and with the use of proper cores introduced in the thickness of walls, and the agglomerating around said cores of a special composition of artificial-stone paste, in the manner and for the purpose herein set forth.

2. In monolithic structures, such as wharves, dams, abutment-walls, &c., making the walls hollow or honeycombed, and filling the said hollows or cells with pounded earth, as herein set forth, for obtaining greater inertia strength or bulk of masonry at reduced expense.

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