UNITED STATES PATENT OFFICE.

THOMAS JONES, OF CHICAGO, ILLINOIS.

COMPOUND PLASTER.

SPECIFICATION forming part of Letters Patent No. 421,172, dated February 11, 1890.

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To all whom it may concern

Be it known that I, THOMAS JONES, of Chicago, Illinois, have invented a new and useful Compound Plaster, of which the following is a specification.

My improved compound is perfectly adapted for covering walls and ceilings and other similar surfaces.

In ordinary plastering it has been very difficult to produce uniformly-good work, owing to different circumstances and conditions which have been only partly under control. The first of these difficulties relates to the drying of the mortar coat, on the manner of which depends the degree of hardness it will attain, as if the mortar dry too rapidly it will not become so hard or dense as when it is allowed to dry slowly. When in the heat of summer the wet mortar is applied on dry laths, the latter quickly absorb the water from the mortar, which then becomes rigid, and the laths, expanding from the absorption of the water, break off the clinches or keys of the mortar, leaving it liable at any time to fall off, which may be a very serious matter when the ceiling is high. On the other hand, when mortar dries too slowly, it not only delays the completion of the work of the plasterer, but also that of the other tradesmen. Thus the time necessary to execute good plastering becomes a serious consideration in the construction of a building. Another difficulty arises from the necessity of doing work in two coats, the different degrees of absorption of the brown mortar occasioning frequently much trouble in applying the finishing-coat; and when it is attempted to assist or force the drying, especially by using "salamanders," the resultant work is of very inferior quality.

It is the object of my invention to overcome these difficulties and to provide a mortar which can be dried rapidly or slowly at will, which is easily and rapidly worked, and which can be molded and shaped as desired, and which, when dry, becomes extremely hard and is very durable. My plaster sets in two or three hours, according to the proportions of the ingredients used, and attains a stone-like hardness in a very short time, leaving no water in the material except in chemical combination, thus enabling work to be finished in about the same time that it takes to lay on and finish ordinary putty coat, and in this way effecting an enormous saving in labor and time. Only one coat need be used, as the material can be laid in any thickness desired.

To prepare my compound plaster, I take of freshly-burned lime three or four parts, of pure silex or silicious sand two or three parts, and of gypsum rock or plaster one part, by weight. These I reduce to a fine powder, preferably by grinding them together in a dry state, and to every one hundred pounds of the compound I add four or five ounces of bicarbonate of potash, also in fine powder, and thoroughly mix. The potash salt may be used in solution in the proportion of one ounce of the salt to one gallon of water and used to gage the material. The material may then be headed up in casks until wanted, taking care to exclude the air where it is not wanted for immediate use.

When I wish to apply my material to a lathed surface, I prefer to use laths kerfed longitudinally through two-thirds of their thickness at a distance of, say, three-eighths of an inch apart and lay them on the work not more than one-sixteenth of an inch apart. This gives me a perfectly-keyed and continuous surface to work upon, and effectually prevents expansion of the laths with the moisture of the plaster, which does not penetrate more than one-half the depth of the kerfs in the laths.

In applying the material I proceed as follows: I first lay on the work to be covered wood strips of even thickness at convenient distances apart, and then lay on the material, which has been brought into a plastic condition by the addition of water or the potash solution, using a straight-edge to remove any superfluous material and filling up to the plane of the strips where deficient in thickness. I then float lightly over, and lastly, with the trowel, bring to an even face without water. The work is then completed and in a few hours attains a stone-like hardness. The same method is applied whether applied on brick, wood, or wire-cloth; but the brick require to be wetted before the plaster is applied, which precaution is also recommended on lath-work where the latter are very dry.

I do not confine myself strictly to the above-

stated proportions, as they may be varied considerably as regards the first three named; but if more of the potash salt be added efflorescence will result.

Where I wish for a rapidly-setting plaster, I increase the proportion of the lime, and, on the contrary, where I desire a slow-setting plaster, I increase the proportion of silica, or I may substitute for one part of the latter an equivalent proportion of granite ground up together, as before.

When I use the silicious plaster for burial-caskets, wash-tub lining, &c., I lay the material on wire-netting of suitable quality and press in molds to any desired shape. When the articles are cast and partly or entirely dry, I submit them to a hot bath of dilute silicate of soda or potash and boil until the silicate has thoroughly penetrated the plaster, and then treat with chloride of calcium and wash off the resultant salt.

This compound forms a good resisting-surface, and will endure a red heat without disintegration. It can be applied in any temperature, and dries perfectly and quickly without the aid of artificial heat, and can be laid on in any thickness desired, so as to dispense with two-coat work in plastering; and as the proportions are fixed in the manufacture nothing is left in the application to the judgment of the unskilled laborer, and uniform excellence in the work is secured.

I claim—

The described compound plaster, consisting of three to four parts of lime, two to three parts of silica, and one part of gypsum, said ingredients being mixed together in a finely-divided condition and bicarbonate of potash added thereto in about the proportion stated.

THOMAS JONES.

Witnesses:
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