

UNITED STATES PATENT OFFICE.

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TO ADAMS & ELTING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF
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SIZE.

1,015,365.

Specification of Letters Patent.

Patented Jan. 23, 1912.

No Drawing.

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To all whom it may concern:

Be it known that we, WILLIAM A. WEELANDS and EUGENE WILLIAMS, both citizens of the United States, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Size, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same.

Before applying calcimine or other finishing material to the surface to be finished it is necessary to apply a size of some kind in order to furnish a foundation for the finishing material and prevent it from soaking into the surface and presenting a mottled and unsatisfactory appearance.

Our invention has for its object the provision of a size which shall be cheap and efficient and which may be applied to a surface in the form of a watery mixture.

Generally speaking, our invention comprises a body material and an adhesive material mixed together in a finely divided state, enough water being added thereto just before it is applied to permit it to be spread in a thin layer over the surface treated. These materials are preferably selected so that they form a firm light and durable coating. We have found that plaster of Paris or gypsum answer satisfactorily as the body ingredient while, glue, casein, dextrin or other albuminous substances may be used as the adhesive ingredient. When such a size is mixed with water and applied to a surface, the glue binds the plaster of Paris to the surface and there it sets and hardens, forming a hard white foundation for the finishing coat. Not only will the finishing coat adhere firmly to the primary coat but, by reason of the whiteness of the latter, the coloring of the finishing coat is brought out in all its brightness and richness.

There is another advantage in size of this character. After the size has been applied it is comparatively permanent so that even if the finishing coat is afterward washed off, the primary coat remains sufficiently intact to permit a new finishing coat to be applied without re-sizing.

Where walls containing lime, such as brick or plaster walls, are to be calcimined or painted, it is difficult to prevent the lime,

which has an affinity for the coloring ingredients, from seriously affecting the coloring of the finish, leaving it mottled and faded.

Our invention has for a further object the provision of a water size which will be lime proof, that is, protect the finishing coat against the ravages of the alkali of the lime in surfaces to be finished.

We have found that by adding to the size a small quantity of alum or other substance containing aluminum, the alkali of any lime which would otherwise work through the size and attack the coloring matter in the finishing coat will be neutralized so that the coloring of the finishing coat will not be injured. This ingredient also performs other functions: it increases the specific gravity of water so that the powdered mixture is more readily held in suspension therein; and it acts as an antiseptic, preventing fermentation, particularly of the glue.

Additional advantageous results may be obtained from the addition of a small quantity of borax, boracic acid, sodium carbonate, potassium carbonate or the like. This ingredient softens the water with which the powdered size is mixed, increases its specific gravity, assists the alum in preventing fermentation, and serves to cut any grease which may be present on the surface treated.

The several ingredients may be mixed together in various proportions, we having found, however, that a size containing forty parts (by weight) of plaster of Paris to thirty parts of the best quality of glue gives excellent results. To these may be added one part of the alum ingredient and one part of the borax ingredient. These proportions may of course be changed to meet given conditions, without departing from the scope of the present invention.

In preparing the size, all of the ingredients are thoroughly mixed in ground condition, and, when it is to be used, enough water is added thereto to give it the proper consistency to make its application easy.

Our improved size has been found to be particularly useful for treating so-called "green" walls, that is, walls in which the plaster or mortar has not become thoroughly dry. It is often necessary to calcimine walls in this condition with the result that, notwithstanding the utmost care on the part

of the decorator, the calcimine will run upon the walls and the coloring matter thereof will be attacked by the alkali in the lime, producing an uneven and mottled appearance. Such walls, after having been
5 treated with our improved size, and calcimined in colors particularly susceptible to the influence of alkalis, have been found to be covered with smooth, uniform coating
10 of a rich, even tint entirely unlike that obtained with ordinary water size.

While we have described at length the best form of our invention or discovery now known to us, we do not desire to be limited
15 to the exact ingredients or the proportions thereof specified, since in its broader aspects our invention or discovery contemplates a wide range of ingredients and proportions

thereof as will be evident from the terms employed in the definitions constituting the 20 appended claim:

Having now fully described our invention, what we claim as new and desire to secure by Letters Patent is:

A water size consisting of forty parts of 25 powdered plaster of Paris, thirty parts of powdered glue, one part of powdered alum, and one part of powdered borax, mixed together in a natural state.

In testimony whereof, we sign this specification in the presence of two witnesses. 30

WILLIAM A. WEELANDS.
EUGENE WILLIAMS.

Witnesses:

WM. F. FREDENREICH,
HARRY S. GAITHER.