

UNITED STATES PATENT OFFICE.

MELVIN B. CHURCH, OF GRAND RAPIDS, MICHIGAN.

METHOD OF PREPARING DECORATING MIXTURES.

SPECIFICATION forming part of Letters Patent No. 513,003, dated January 16, 1894.

Application filed June 22, 1893. Serial No. 478,493. (No specimens.)

To all whom it may concern:

Be it known that I, MELVIN B. CHURCH, a citizen of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Methods of Preparing Decorating Mixtures, of which the following is a specification.

My invention relates to the manufacture of a composition or mixture of matter, designed mainly for wall decoration of that class in which a base of calcined gypsum is mixed with glue, the whole being in a dry pulverized condition when put upon the market, and requiring the addition of water to reduce the composition or mixture to a condition required for use. These materials as used prior to the invention of Robert E. Haire, as shown in his application, Serial No. 422,899, filed in the United States Patent Office on the 26th day of February, 1892, have required boiling water, or very hot water to reduce them to a plastic or liquid condition. By the invention of the said Haire the use of hot water and the inconveniences resulting therefrom, well known to the trade, have been avoided, the glue mixed with the calcined gypsum or other base, being in a condition of such fineness as to be reducible in cold water.

My invention herein set forth, consists of an improved mode of preparing the base and glue for reducing the glue to the extremely fine division required, having certain advantages in respect to economy and convenience. I have used the method herein described in the mixing and preparation of calcined gypsum. The gypsum I take in the ordinary ground condition, and mix therewith evenly, the proper proportion of liquid glue. This proportion is from five (5) to eight (8) parts of the glue (a good quality is necessary) to one hundred parts of the base, it being understood that sufficient water is added to render the glue suitably liquid. After being mixed, the combined gypsum and glue are dried, to eliminate the water of the liquid glue. This should be done carefully, and special care being taken not to allow the mixture to become heated high enough to impair the quality of the glue, that is, to impair its adhesiveness or

solubility. This heat I keep below 212° Fahrenheit. After the parts have been evenly mixed, and dried, I then run the mixture through a grinding mill, preferably using for this work, the mill used for grinding calcined gypsum in the manufacture of alabastine.

While I prefer the subsequent grinding of the mixture as described I desire it to be understood that this step may not always be found necessary as the mixture may be found to be sufficiently fine for immediate use without the additional step of grinding. The calcined gypsum and glue being thus ground together, the glue is reduced to an exceedingly fine condition, as fine as the base, and in this condition of impalpable powder, the mixture may be reduced to a plastic or liquid and adhesive condition by the addition of cold water alone and is suitable to apply with a brush to make a firm and adhesive coating.

In practically working my invention, I mix the base in a pulverized form with the liquid glue by any suitable means as by stirring the mixture as the glue flows in. The mixture is then subjected to heat in any suitable drier, and is afterward ground, as herein before explained.

The special discovery which is the basis of my invention herein explained, is that the liquid glue can be thus introduced in quantities sufficient to make the mixture adhesive, however prepared, and yet not require the recalcination of the gypsum, which would subject the glue to too great a degree of heat in order to drive off the water of crystallization.

Heretofore it has been supposed that water introduced with the glue into the calcined gypsum would be absorbed by the gypsum and become water of crystallization, before it could be driven off. In the method above described the glue being a strong retarder the water therein is not at once taken up by the gypsum. Care must be taken, however, to drive off the water before absorption can take place. The water should be driven off within an hour after the glue has been introduced.

I prefer in practice to feed the glue into the calcined gypsum in the presence of heat so that the water in the glue or retarder will be driven off or evaporated before it can be ab-

sorbed by the calcined gypsum. This prevents absolutely the water in the glue from becoming water of crystallization in the gypsum and the result is that the finished product is a cementing compound whose setting qualities have not been impaired by the water introduced with the glue which would not be true of a compound in which the water was absorbed by the gypsum.

10 In order to thoroughly incorporate the ingredients together I prefer to mix the glue as it is fed into the gypsum.

I may use with the compound sulphate of zinc in the proportions of from one to two 15 pounds of the sulphate of zinc to each ten pounds of glue—the proportions varying according to the quality of the glue, the proportions given being for good glue. Instead of the sulphate of zinc, I may use as equivalents, 20 sulphuric acid or muriate of zinc. This has the effect to neutralize the fatty or organic matter of the glue, and regulates the setting of the compound; prevents cracking in heavy relief work and also acts as a preservative for 25 the glue and as an antiseptic in the coating when on the wall. The sulphate of zinc may

be added to the glue in process of manufacture or to the compound at any time.

I claim—

1. The herein described method of making 30 an adhesive wall coating compound of animal glue and calcined gypsum, consisting in feeding the liquid animal glue into the pulverized gypsum in the proportions, substantially as described, mixing the same by stirring as 35 the glue is fed, and subjecting the mixture to heat to dry the same, substantially as described.

2. The herein described method of making 40 an adhesive wall coating compound of animal glue and calcined gypsum, consisting in mixing the liquid animal glue and pulverized gypsum together, driving off the water in the glue before being absorbed by the gypsum by heat, and subsequently grinding the ingredi- 45 ents so mixed, substantially as described.

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

MELVIN B. CHURCH.

Witnesses:

HENRY E. COOPER,
WALTER DONALDSON.