

UNITED STATES PATENT OFFICE.

WILLIAM T. WHITEHEAD, OF MAGOG, CANADA, ASSIGNOR OF ONE-HALF TO
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ZINC RESIST-MORDANT.

SPECIFICATION forming part of Letters Patent No. 499,690, dated June 13, 1893.

Application filed February 21, 1893. Serial No. 463,249. (No specimens.)

To all whom it may concern:

Be it known that I, WILLIAM T. WHITEHEAD, a subject of the Queen of Great Britain, residing at Magog, in the Province of Quebec, Dominion of Canada, have invented an improvement in Resist-Mordants for Plain-Dyed Fabrics, of which the following is a specification.

This invention has for its object the production of cloth having a pattern or figure thereon of a shade contrasting with the ground, the pattern or figure being either of the same color as the ground color or of a different color, and in accordance therewith my invention consists in printing a pattern or figure on the cloth in a resist-mordant containing zinc as the essential or active element and thereafter dyeing the cloth a plain color, substantially as will be described.

In the practice of my invention, I take cotton, wool or silk fabric prepared for printing in any usual or well known way, and print thereon the desired pattern or figure in a resist-mordant to be hereinafter particularly described, dry the usual way and steam as required. I then dye the cloth a plain color in a jig, dye-beck, padding machine, or in any of the well known ways, and then develop and finish in the usual manner. The cloth so treated will then present a plain colored ground with the pattern or figure displayed thereon in the same color, but of a shade contrasting with the ground.

In the course of my experiments I have discovered that by using a resist-mordant containing zinc as the essential or active element thereof and printing the pattern or figure in such a resist-mordant mixed with a proper thickener and thereafter dyeing the fabric a plain color and finishing, the zinc in the mixture will act to mordant a portion of the plain color on the parts of the fabric covered by the resist-mordant, at the same time resisting some of the color on such portions, and the result is the figured effect in two different shades of the same color. The pattern or figure in this instance will be lighter than the ground work. If a deep, dark shade of color is desired in the pattern, then that particular color will be mixed with a resist-mordant pre-

paratory to printing therewith, and when the cloth has been plain dyed the same color and finished, the pattern or figure appears in a shade darker than the ground. In this instance the zinc appears to act as a mordant for the color carried by the mixture fixing it in the cloth in the desired pattern, while it also acts to resist a portion of the plain color in the subsequent dyeing.

I prepare the resist-mordant mixture by taking about six pounds more or less of metallic zinc in a finely divided state, or a zinc compound, such as zinc oxide, hydrate, or carbonate, to supply the zinc, which is the essential or active element, and mix it with one-half a gallon of water to which I add one gallon of starch paste (one and one-half pounds per gallon) and one-half gallon of albumen solution (six pounds per gallon) or any other usual thickening preparation such as gum tragacanth or gum arabic. These ingredients are thoroughly mixed and the cloth is printed therewith. For the best results when metallic zinc is used it should be ground to an impalpable powder and mixed with the water.

If the pattern or figure is to be of a darker shade than the ground I mix a coal-tar extract or pigment color with the foregoing mixture in the proper proportion and quantity, the same varying according to the depth of shade desired, the character of the pattern, particular nature of the color itself, &c. I can also produce very beautiful effects by my process by making the color in the resist-mordant and the color of the ground different, in which case the finished cloth will have the pattern or figure in one color and the ground in another, and pattern and ground may or may not contrast in shade as desired.

In another concurrently pending application (Serial No. 458,580, filed January 16, 1893), the use of zinc compounds to supply the essential or active element, is described and specifically claimed.

I do not wish to restrict myself to the exact proportion of the various ingredients composing the mixture described, as the same can be varied without departing from the scope of my invention, the gist of which consists in

producing a pattern or figure by the employment of a resist-mordant containing zinc as its essential or active element.

I claim—

5 1. The process of producing cloth having a pattern or figure thereon of a shade contrasting with the ground, which consists in printing the pattern or figure on the cloth in a resist-mordant containing zinc as the essential
10 or active element, and thereafter dyeing the cloth a plain color, substantially as described.

15 2. The process of producing cloth having a pattern or figure thereon of a shade darker than the ground color, which consists in printing the pattern or figure on the cloth in a resist-mordant containing zinc as the essential or active element, and a color, and thereafter

plain dyeing the cloth in the same color, substantially as described. 20

3. The process of producing cloth having a pattern or figure thereon of a color contrasting with the ground, which consists in printing the pattern or figure on the cloth in a resist-mordant containing zinc as the essential
25 or active element, and a color, and thereafter dyeing the cloth in a plain contrasting color, substantially as described.

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

WILLIAM T. WHITEHEAD.

Witnesses:

JAS. DOLPHIN,

HUGH JAMIESON.