

UNITED STATES PATENT OFFICE.

THOMAS ASPINALL, OF BOLTON, ENGLAND.

METHOD OF PREPARING SIZING.

SPECIFICATION forming part of Letters Patent No. 724,238, dated March 31, 1903.

Application filed June 23, 1902. Serial No. 112,940. (No specimens.)

To all whom it may concern:

Be it known that I, THOMAS ASPINALL, F. C. S., analytical and manufacturing chemist, a citizen of England, residing at 42 Gilnow road, Bolton, in the county of Lancaster, England, have invented certain new and useful Improvements in Methods of Preparing Sizing, of which the following is a specification.

This invention refers to improvements in or relating to the method of preparing sizing for sizing and finishing cotton, linen, and the like fabrics; and it consists in heating starchy matter first with caustic soda or caustic potash until transparent, then neutralizing the caustic used by means of a mineral or organic acid—such as sulfuric acid, hydrochloric acid, carbonic acid, oxalic acid, citric acid, acetic acid, and other organic acids, or magnesium sulfate—then “toning” to render the fabric workable by any suitable toning material or substance—such as soluble oil, oleic oil, tallow, soap, palm-oil, cocoanut-oil, alum, and the like—most suitable to obtain the desired or required result.

In order that my said invention may be readily understood and carried into effect, I will now proceed to give two examples, first, of a pure size, and, second, of a filled or weighted size in their respective order.

Pure size.—One sack of two hundred and eighty pounds, consisting of either sago, farina, maize-starch, or wheat, or any other starch or flour, suspended in one hundred and fifty gallons of water, then treated or mixed with, say, five gallons of caustic soda, (1.450 specific gravity,) which must stand agitating until “swelled” and transparent, after which must be neutralized with five gallons of sulfuric or other acid most suitable, of equal strength, then diluted to two hundred gallons and heated as desired, after which “tone” with fifty pounds of soap.

Filled or weighted size.—One sack of two hundred and eighty pounds, consisting of either sago, farina, maize-starch, or wheat, or any other starch, suspended in one hundred gallons of water, then treated or mixed with, say, five gallons of caustic soda, (1.450 specific gravity,) which must stand agitating until swelled and transparent, after which must be neutralized with five gallons of sulfuric or other acid most suitable, of equal

strength, then add ten gallons magnesium chlorid, (1.280 specific gravity,) also four gallons of zinc chlorid, (1.350 specific gravity,) to which must be added or mixed two hundred and twenty-four pounds of china-clay, after which tone with, say, ten pounds of castor-oil or twenty pounds of tallow.

The cotton, linen, and like fabrics are passed through the size in the usual manner in the process of finishing in the ordinary machines employed in sizing, bleaching, and finishing works.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. The method of preparing sizing for sizing and finishing cotton, linen and like fabrics, consisting in treating starchy matter in a suspended state with an alkali, subsequently neutralizing the alkali by means of an acid, and then “toning” the product with a suitable oleaginous substance.

2. The method of preparing sizing for sizing and finishing cotton, linen and like fabrics, consisting in treating starchy matter in a suspended state with caustic soda, subsequently neutralizing the soda by means of an acid, and then “toning” the product with a suitable oleaginous substance.

3. The method of preparing sizing for sizing and finishing cotton, linen and like fabrics, consisting in treating starchy matter in a suspended state with caustic soda, subsequently neutralizing the soda by means of a mineral acid, and then “toning” the product with a suitable oleaginous substance.

4. The method of preparing sizing for sizing and finishing cotton, linen and like fabrics, consisting in treating starchy matter in a suspended state with caustic soda, subsequently neutralizing the soda by means of a mineral acid, magnesium and zinc chlorids and china-clay, and then “toning” the product with a suitable oleaginous substance.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

THOMAS ASPINALL.

Witnesses:

EDMUND CHADWICK,

JAS. STEWART BROADFOOT.