

UNITED STATES PATENT OFFICE.

JOHN THOMAS REID AND HENRY THORP, OF PENDLETON, ENGLAND.

DYEING TEXTILE FIBERS, YARNS, AND FABRICS.

SPECIFICATION forming part of Letters Patent No. 612,274, dated October 11, 1898.

Application filed May 17, 1898. Serial No. 680,975. (No specimens.)

To all whom it may concern:

Be it known that we, JOHN THOMAS REID and HENRY THORP, subjects of the Queen of Great Britain, and residents of Pendleton, near Manchester, in the county of Lancaster, England, have invented certain new and useful Improvements in Dyeing Textile Fibers, Yarns, and Fabrics, (for which we have made application for Letters Patent in Great Britain, numbered 3,604, dated February 14, 1898,) of which the following is a specification.

Our invention relates to improvements in dyeing vegetable fibers, yarns, and fabrics, hereinafter for convenience of description referred to as "fibrous materials;" and the object of our invention is to obtain certain fast and permanent colors known as "khaki" shades.

In carrying our invention into effect we first scour the fibrous materials to free them from all impurities, then dry, and when dry run them through a bath of olein-oil and water in the proportion of, say, two quarts of oil to sixteen gallons of water. We then dry the fibrous materials and afterward impregnate them with the following dye liquor: twenty gallons of a solution of acetate of chromium, (20° Twaddell,) twenty gallons of a solution of acetate of iron, (12° Twaddell,) and eight ounces of alizarin-blue S dissolved in four gallons of a solution of bisulfite of soda or potash, (54° Twaddell.) When thoroughly impregnated with the above liquor, we mangle the fibrous materials and then dry them. We then steam the fibrous materials for about an hour at, say, a steam-pressure of four pounds to the square inch and subsequently develop

and fix the color by passing the fibrous materials through an alkaline bath composed, say, of sixteen gallons of water, eight pounds of common soda, and three gallons of lime-water. We then by preference soap the fibrous materials and finally wash and dry them.

For full or dark shades we may repeat the above process as often as required and may vary the proportions for different shades as required.

In place of the alizarin-blue S we might employ ordinary alizarin-blue, gallein, cerulein, or like product of anthracene, and in place of the acetates we might employ any other suitable salts of chromium and iron.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim, and desire to secure by Letters Patent of the United States, is—

The process of dyeing vegetable fibrous materials certain fast and permanent colors known as "khaki" shades which process consists in passing the materials through a bath of olein-oil, drying them, impregnating them with a mixed solution of alizarin-blue S, chromium and iron salts, then drying, steaming and developing the color by treatment with an alkali substantially as herein set forth.

In witness whereof we have hereunto set our hands in presence of two witnesses.

JOHN THOMAS REID.
HENRY THORP.

Witnesses:

S. W. GILLET,
HERBERT R. ABBEY.