UNITED STATES PATENT OFFICE.

PETER REID, OF PASSAIC, AND JOHN EASTWOOD, OF BELLEVILLE, NEW JERSEY, ASSIGNORS TO THE CELLULOID MANUFACTURING COMPANY, OF NEW YORK, N. Y.

MANUFACTURE OF PYROXYLINE FOR USE IN TOPICAL PRINTING.

SPECIFICATION forming part of Letters Patent No. 256,597, dated April 18, 1882.

Application filed October 13, 1881. (No specimens.)

To all whom it may concern:

Be it known that we, PETER REID, of Passaic, Passaic county, New Jersey, and JOHN EASTWOOD, of Belleville, county of Essex, and State of New Jersey, have invented a new and useful Improvement in Manufactures of Pyroxyline for Use in Topical Printing, of which the following is a specification.

The invention has relation to improvements in the art of applying designs, figures, colors, &c., to textile fabrics, prepared skins, paper, and other surfaces.

The distinctive novelty of the invention consists in the employment of a solution containing soluble pyroxyline for the purpose of "setting" or "fixing" the design in connection with what is known as "topical printing," in which an impression is delivered by means of pressure or by bringing a surface having a "color" or "ink" applied to it in contact with another surface upon which the impression is intended to be made.

Heretofore in the art of topical printing, or what is commonly called "calico-printing," it has been necessary to apply heat or other treatment after the printing operation, in order to fix or set the ink or color upon the surface which has received the impression. But the employment of a solution of pyroxyline as a binding material to secure the mechanical attachment of pigments to surfaces upon which impressions have been made by printing enables us to dispense with any subsequent treatment whatever after the application of the mixture by means of printing to such surfaces.

Varnishes or mixtures have heretofore been made by combining the coloring agent with pyroxyline and a volatile spirit, which varnishes or mixtures have been applied by means of a brush to form a coating or covering for fabrics, picture-frames, &c. It has also been customary to make a bath of a volatile spirit carrying a coloring agent and a small percentage of pyroxyline in which fabrics have been immersed, the volatile spirit being afterward permitted to evaporate; but pyroxyline has not been known to possess the qualities that render it susceptible of use in fixing or setting a color or ink so as to make it available for use in the art of printing.

In practice we prepare a solution consisting of soluble pyroxyline, a solvent, and a coloring agent, employing, if necessary, a suitable menstruum—such as alcohol, wood-naphtha, &c.—the ingredients being thoroughly united to form a homogeneous compound. Any soluble pyroxyline may be employed; but we prefer that form of pyroxyline known as "nitro-cellulose;" and we have used with especially satisfactory results a solution produced by subjecting a suitable fibrous material to the action of sulphuric and nitric acid.

While we may use successfully a solution composed exclusively of dissolved pyroxyline and a coloring agent, we do not intend to limit our invention to the exclusion of all other ingredients in the ink employed, because the essence of our invention is the employment, in an ink for printing, of a solution of pyroxyline as a binding material to secure the mechanical attachment of pigments to textile fabrics, &c., without further treatment after the application of the mixture to the fabric by means of printing, and we intend our claim for patent protection to be understood accordingly, so that it may not be evaded and the benefit and substantial value of our discovery be wrongfully availed of by mere colorable change of composition.

The solution will be made in any convenient way, and will be adapted to perform the offices of an ink or color, according to circumstances. It will be of the proper consistency, and may be applied in the customary manner to the rollers, types, blocks, or other agents for delivering the impression, and the coloring agent may be of any kind or nature. By the terms "ink" and "color" we mean all inks and colors of every nature which are used in connection with the art of printing, whether the impression is to be delivered upon textile material, prepared skins, paper, or any other surface or material, be the same what it may.

What we claim as new, and desire to secure by Letters Patent, is—

1. The process herein described of setting

or fixing a design on fabrics, &c., which consists in printing or impressing the design on the fabric with a solution composed essentially of dissolved pyroxyline and a coloring agent, substantially as set forth.

2. An ink or color for topical printing, composed essentially of dissolved pyroxyline and a coloring agent, substantially as set forth.

In testimony that we claim the foregoing improvement in manufactures of pyroxyline as above described we have hereunto set our hands this 15th day of June, 1881.

PETER REID.
JOHN EASTWOOD.

Witnesses:
CHAS. C. GILL,
HERMAN GUSTOW.