

# UNITED STATES PATENT OFFICE.

JOSEPH R. FRANCE, OF NEW YORK, N. Y.

PROCESS OF MANUFACTURING ARTICLES FROM COMPOUNDS OF PYROXYLINE.

SPECIFICATION forming part of Letters Patent No. 393,753, dated December 4, 1888.

Application filed March 3, 1888. Serial No. 266,043. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH R. FRANCE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Process of Manufacturing Articles from Compounds of Pyroxyline, of which the following is a specification.

My invention has for its object to provide an improved process for the manufacture of collars, cuffs, shirt-fronts, playing-cards, checks, and various articles from pyroxyline compounds, said articles being produced by printing thereon any desired pattern in one or more colors.

It is the purpose of my invention to provide a process of manufacture whereby the ornamental patterns imprinted upon the sheet of pyroxyline compound shall be practically indelible; and the invention consists in certain improvements upon the process contained in an application filed by me September 8, 1887, Serial No. 249,141.

Heretofore in the manufacture of articles of the class described it has been customary to print upon a sheet of celluloid or other compound of pyroxyline by applying to the surface thereof an aniline ink dissolved in some material which is a solvent of celluloid. In this process, however, the printing is done upon sheets which have been as thoroughly seasoned as practicable, and from which the solvents employed in the manufacture of the celluloid have been practically eliminated. The result has been that the solvents of pyroxyline by which the ink is held in solution can act upon the surface of the celluloid sheet upon which they are laid, and before the solvents can effect a substantial result they are evaporated, producing only a surface effect, which soon wears off. To avoid this objection and to print an indelible pattern upon the sheet of celluloid or other compound of pyroxyline, I take these sheets when they leave the sheeting-machine, or as soon thereafter as practicable—at a time when the surfaces of said sheets have been exposed to but little evaporation. In this condition they contain a large proportion of the alcohols or solvents used in their manufacture, and may therefore be properly termed “green” or “unseasoned.” Upon these unseasoned sheets I print any desired pattern in any usual manner, employing for this purpose an aniline

ink or color dissolved in any material which is also a solvent of pyroxyline. The celluloid being in a green or unseasoned condition it contains sufficient of the alcoholic solvents employed in its manufacture to act as a mordant upon the aniline and absorb the color imprinted upon the sheet. The atoms of alcohol, being in the body of the sheet, greedily absorb the atoms of the coloring-matter, which sink in from the surface and permeate the body of the sheet, the particles of coloring-matter taking the place of the solvents as the latter evaporate from the sheet. This method therefore insures the permeation of the sheet by the pattern to such a depth as to render the latter practically indelible. The printed sheets are then seasoned by any known method—as, for example, by suspending them in a warm room in a current of air of proper temperature. The printed and seasoned sheet may then be subjected to heat and pressure to incorporate any remaining portion of the color or ink which from excess remains on the surface of the sheet of celluloid. An imitation of the fiber of linen or muslin may also be produced on the printed sheets by pressure between flat plates under heat while lying between sheets of said fabrics.

What I claim is—

1. The process of manufacturing articles from pyroxyline compounds, said process consisting in printing upon a sheet of said material while in a green or unseasoned condition with an ink or color dissolved in a substance which is also a solvent of pyroxyline, substantially as described.
2. The process of manufacturing articles from compounds of pyroxyline, said process consisting in printing the desired pattern upon said material as the sheets come from the sheeting mechanism or as soon thereafter as practicable before the solvents contained have evaporated, the ink employed being an aniline color dissolved in some substance which is also a solvent of pyroxyline and then seasoning the printed sheets, substantially as described.

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

JOSEPH R. FRANCE.

Witnesses:

GEORGE E. HAND,  
WM. H. MEEKS.