

# UNITED STATES PATENT OFFICE.

PIERRE MERCIER AND MARC CHAUMARTIN, OF LYONS, FRANCE.

## PROCESS OF DYEING.

SPECIFICATION forming part of Letters Patent No. 684,840, dated October 22, 1901.

Application filed June 7, 1898. Serial No. 682,848. (No specimens.)

*To all whom it may concern:*

Be it known that we, PIERRE MERCIER and MARC CHAUMARTIN, citizens of the Republic of France, residing at Lyons, France, have  
5 invented certain new and useful Improvements in Dyeing, (for which we have obtained a patent in France, deposited March 3, 1898,) of which the following is a full, clear, and exact specification.

10 The object of our invention is a process for the obtaining of double shades on silk cloths, whether pure or a union.

This process consists, first, in first preparing the silk in skeins or the floss-silk that is  
15 to be used either as warp or as woof of the cloth by submitting it through any known process to the operations of scouring, galling, clearing, passing the bichlorid of tin, fixing, and washing; second, in weaving a cloth with  
20 the warp or woof thus prepared and a warp or woof of raw silk that has not been prepared; third, in passing the cloth thus obtained through several baths of successive dyes, the dyestuffs of which, duly chosen,  
25 will fix on one of the parts (either the warp or the woof) and not on the other, for the preparation to which one of these parts has been submitted acts as a mordant with some dyestuffs and as a reserve with others. One  
30 can therefore choose for one of the baths a dyestuff which will fix on the prepared part and not on the raw one and for the other bath a dyestuff which will fix on the raw part without affecting the prepared part in a perceptible manner. For instance, the cloth having  
35 been obtained from a woof prepared as above stated and, an unprepared raw silk warp, if one scours the same and puts it into a bath of methylene blue it will become blue;

but a simple clearing will suffice to take the 40 blue color out of the warp, whereas the woof will remain blue. After that the warp can be dyed pink in a second bath of rhodamine without changing the blue shade of the prepared woof in a perceptible manner. This 45 example is sufficient to show the way of going to work in every possible case. One can thus obtain the effects of double shades on pure silk cloths *ad infinitum*. One can also combine this process with those already in use to 50 obtain double shades on cloths made of silk and cotton or of silk, wool, and cotton, so as to give, if necessary, three, and even four, different shades to the same cloth.

Having now described our invention, what 55 we claim as new, and desire to secure by Letters Patent, is—

The process described consisting of subjecting, before weaving, one of the components, either the warp or woof to tannin and 60 bichlorid of tin, serving as mordant for basic dyes and as reserve for acid dyes, then weaving said component with the other unprepared component, and then passing the fabric through several baths of successive dyes, 65 the acid dye on which the preparation acts as resist fixing on the unprepared material, and the basic dye on which the preparation acts as mordant, fixing on the prepared material, substantially as described. 70

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

PIERRE MERCIER.  
MARC CHAUMARTIN.

Witnesses:

GASTON JEAUNIAUX,  
LOUIS PUECHGUD.