UNITED STATES PATENT OFFICE.

EMILE MAERTENS, OF OSWEGO FALLS, NEW YORK.

ART OF MAKING TEXTILE FABRICS.

SPECIFICATION forming part of Letters Patent No. 341,927, dated May 18, 1886.

Application filed November 13, 1884. Serial No. 147,921. (No model.)

To all whom it may concern:

Be it known that I, EMILE MAERTENS, a citizen of the United States, and a resident of Oswego Falls, Oswego county, New York, have invented certain Improvements in the Art of Making Textile Fabrics, of which the following is a specification.

The object of my invention is to produce, in a piece of single-ply fabric, the effect of a double-ply fabric or one woven with two sets of threads.

In carrying out my invention I preferably proceed as follows: I first produce a mixed yarn of cotton or other vegetable fiber and wool or other animal fiber, either by thoroughly carding or otherwise mixing the two fibers prior to spinning, or by doubling a strand of cotton and one of wool, and this mixed yarn I use in the production of my improved fabric, which has only a single ply, the mixed yarn being used in both the warp and weft, or in the warp only, as desired. The fabric (which is preferably woven in the white) is then scoured, set, and otherwise prepared as though for piece-dyeing; but before dyeing the cloth I first subject portions of the same to the action of sulphuric acid, hydrochloric acid, hydrochloric-acid gas, or other agent which will destroy the vegetable fiber without affecting the animal fiber. The limits of those portions of the fabric subjected to the action of the destroying agent are such as to produce patterns or figures of any desired character, and for this purpose the destroying agent, when in liquid form, may be printed upon the surface of the fabric in a manner similar to that adopted in the production of print-cloth, paper-hangings, &c., or portions of the fabric may be protected from the action of the acid by stencil-plates, or may be treated with an impermeable size prior to the subjection of the whole piece to the action of the destroying agent, or the latter may be sprayed or distributed in drops upon the surface of the cloth, in order to produce a spotted effect; or where the fabric is first treated with acid and then subjected to heat to effect the carbonizing of the cotton, those portions of the fabric in which the cotton is to be preserved may be protected by non-conducting plates or coverings, my invention, so far as this feature is concerned, not being limited to any particular plan of subjecting portions of the fabric to the action of the destroying agent. After this treatment—that is to say, after those portions of the vegetable fiber which have to be removed have been carbonized—the cloth is preferably washed and then dyed and finished in the usual way. If a wool-dye is used, the cotton fiber left in the fabric will not be affected thereby; hence in those portions of the fabric from which the said cotton fiber has not been removed the effect will be that of a mixed thread, while in all other portions of the fabric the effect will be that of a plain thread. Similarly, if a cotton-dye is used, the wool threads will not be affected, or, if desired, the wool threads may first be dyed one color and the cotton threads then dyed another color. In some cases, also, the same effect may be produced by doubling a dyed cotton yarn with a white wool yarn, or carding dyed cotton with white wool, the wool being dyed, if desired, after the fabric has been woven and the cotton removed therefrom at the required places, or dyed wool or wool-yarn may be combined with white or dyed cotton or cotton yarn, in the first instance. The preliminary dyeing of the wool yarn, however, is not advisable, as the agent used for the destruction of the cotton yarn has a destructive or deteriorating influence on the dye.

By the above-described method I am enabled to produce in a single-ply fabric effects which have hitherto been possible only in two-ply fabrics containing both plain and mixed threads; hence my improved fabric can be made at less cost than the usual fabric, and may be of less weight, an advantage for some purposes.

If desired, the destructive agent may be one which will affect the wool or animal fiber and leave intact the cotton or vegetable fiber; but this is not always economical, and is therefore inadvisable in most cases.

My invention may be adopted for the production of patterns when the warp is composed partly of wool and partly of cotton threads by destroying one set of threads in those portions of the fabric in which they are not to appear in the pattern; but the use of the mixed threads is preferred.

I claim as my invention—

1. The mode herein described of producing textile fabrics, said mode consisting in weaving a fabric containing both animal and vegetable fibers, and then destroying one set of fibers throughout portions of the fabric, so as to form a pattern, as set forth.

2. The mode herein described of producing textile fabrics, said mode consisting in first making a mixed yarn of animal fiber and vegetable fiber, then weaving a fabric containing such mixed yarns, and then subjecting portions of said fabric to the action of an agent which will destroy one of the fibers, leaving the other intact, the mixed yarn being preserved in those portions of the fabric not subjected to the action of the destructive agent, as set forth.

3. The mode herein described of producing textile fabrics, said mode consisting in first making a mixed yarn of animal and vegetable fiber, then weaving a fabric containing such mixed yarns, then subjecting portions of the fabric to the action of an agent which will destroy one of the fibers, leaving the other intact, and leaving the mixed yarn in those portions of the fabric not treated, and, finally, dyeing one or both of the fibers, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EMILE MAERTENS.

Witnesses:

SLATER LAYCOCK,

PAUL GREENWOOD.