

UNITED STATES PATENT OFFICE.

GUSTAV KRAEMER, OF COLOGNE, GERMANY.

METHOD OF IMPROVING TEXTILE FIBERS, THREADS, AND FABRICS.

942,395.

Specification of Letters Patent.

Patented Dec. 7, 1909.

No Drawing.

Application filed June 24, 1907. Serial No. 380,518.

To all whom it may concern:

Be it known that I, GUSTAV KRAEMER, a citizen of the Empire of Germany, residing at Cologne-on-the-Rhine, in the Empire of Germany, have invented a new and useful Method of Improving Textile Fibers, Threads, and Fabrics, of which the following is a specification.

In my British Patent No. 26,261 of the year 1905 I have described a process of producing transparent coatings on paper, paste-board, card-board, timber and the like, which coatings are impermeable to dampness and remain always supple. A certain mixture is prepared and applied to the said objects and the latter are exposed for a short time to the pressure of warm pressing plates.

My invention consists of the impregnation of textile fibers, threads or fabrics with the said mixture and of drying them either in the air or by means of warm pressing rollers or plates or the like. Thereby they are given important and valuable properties, as will hereinafter be set forth.

The above mentioned mixture is formed as follows: A solution of nitro-cellulose, gun-cotton or other soluble pyroxylin for the preparation of collodion is mixed not only with chlorhydrins (dichlorhydrins, epichlorhydrins), which are derivatives of the glycerin, but also with aromatic derivatives of sulfo-acids which may be derived from esters, chlorids and amids. By the term "sulfo-acid" is meant an organic compound which possesses a radical of sulfuric acid or sulfurous acid. A very suitable mixture of the said kind may be produced in the following manner: 100 parts of soluble pyroxylin for the preparation of collodion are dissolved in 450 parts of alcohol and 350 parts of acetone and to this solution are added 50 to 60 parts of dichlorhydrin and about 25 to 35 parts of an aromatic derivative of a sulfo-acid, for instance the p-toluol-sulfo-chlorid.

The textile fibers, threads or fabrics to be treated are impregnated with the mixture in any known manner and are then dried. If they are to be dim, they are simply air-dried or wind-dried, but if they are to

receive a brilliant luster, they are dried by means of warm pressing cylinders or plates or rollers or the like in any known manner. The so treated fibers, threads or fabrics will show but a slight shortening. Trials prove, that threads of linen, cotton, jute and the like impregnated with the mixture and dried possess a silky appearance or luster and a considerably increased tensile strength, while owing to the suppleness of their coating they retain their full capability of being woven or otherwise treated. The latter property is the more important, as it is possible to obtain in this manner fabrics, which satisfy increased requirements as regards strength and resistance against dampness. The fabrics obtained by spinning and weaving or otherwise preparing the fibers or threads treated in the above described process are useful for various purposes, for example borders and hem laces on women's clothes, which owing to their impermeability to water can be washed off at any time while permanently sustaining their silky luster. It is even possible to add colors to the mixture for simultaneously coloring and impregnating the textile fibers, threads or fabrics.

I claim:

1. The method of improving textile fibers, threads or fabrics, which consists in mixing a solution of nitro-cellulose with chlorhydrin (derivative of the glycerin) and with an aromatic derivative of a sulfo-acid, in impregnating with this mixture the textile matters, and in drying the latter.

2. The method of improving textile fibers, threads or fabrics, which consists in mixing a solution of nitro-cellulose with chlorhydrin (derivative of the glycerin) and with an aromatic derivative of a sulfo-acid, in impregnating with this mixture the textile matters, and in drying the latter by means of warm pressing rollers or the like.

3. The method of improving textile fibers, threads or fabrics, which consists in mixing a solution of nitro-cellulose with chlorhydrin (derivative of the glycerin) and with an aromatic derivative of a sulfo-acid while adding a color, in impregnating with

this mixture the textile matters, and in drying the latter.

4. The method of improving textile fibers, threads or fabrics, which consists in mixing
5 a solution of nitro-cellulose with chlor-
hydrin (derivative of the glycerin) and
with an aromatic derivative of a sulfo-acid
while adding a color, in impregnating with

this mixture the textile matters, and in drying the latter by means of warm pressing 10
rollers or the like.

GUSTAV KRAEMER.

Witnesses:

BESSIE F. DUNLAP,
LOUIS VANDORN.