Patented May 3, 1932 1,856,322

UNITED STATES PATENT OFFICE

ARTHUR L. ERLANGER, OF NEW YORK, N. Y., AND MARTIN WADEWITZ, OF ELIZABETHTON, TENNESSEE, ASSIGNORS TO AMERICAN GLANZSTOFF CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE

FABRIC FROM ARTIFICIAL THREADS

No Drawing. Application filed March 26, 1931. Serial No. 525,596.

This invention relates to the preparation of artificial thread, rayon, etc. and more particularly to the treatment of the precipitated cellulosic material.

In the preparation of artificial silk by the viscose process, for use in producing fabrics, it is the customary procedure to treat the precipitated cellulosic material with a desulphurizing agent, such as sodium sulphide, ammonium sulphide and other desulphurizing agents, to remove the free sulphur held in the precipitated material, and to twist the filaments to form a thread before it is subjected to the handling necessary in the preparation of knitted fabrics.

It is an object of our invention to provide an improved and more economical process for preparing fabrics from precipitated cellulosic material and to provide a procedure in which the above twisting step may be safely omitted. A further object is to provide an improved fabric containing artificial cellulose threads. Other objects will become apparent.

In following our improved procedure, the precipitated filaments are washed, preferably by passing treating liquids through the filaments, or groups of filaments which form a single untwisted thread, wound upon perforated receivers. The washed threads are then dried and used directly in the production of woven or knitted fabrics. After the threads have been made up into fabric, they are subjected to a desulphurizing operation in which they are treated with a sodium sulphide, ammonium sulphide or other suitable desulphurizing solution. The fabric may then be dyed, or otherwise treated to give the desired characteristics to the finished fabric.

When the cellulosic material is precipitated from a viscose spinning solution, the individual filaments have coatings of free sulphur which act as a binder and hold the group of filaments together. When the groups of filaments or threads are desulphurized, as in the usual practice, this binder is removed and the resultant thread is made up of loose filaments, which fall apart so that the groups lose their thread characteristics. The tensile or breaking strength of the thread is somewhat reduced by this desulphurization, and in order to give the thread the required strength for use in the subsequent textile operations, the groups of loose filaments have to be subjected to a twisting on special machinery.

By following our improved procedure, the binder is retained upon the filaments until after they have gone through the knitting, weaving, or other textile operations required to produce a commercially salable fabric in which operations they are subjected to wear and to severe tensile and other breaking strains. Since the tensile strength of this sulphur coated thread is somewhat greater than that of the desulphurized thread and the filaments are bound together without a special twisting operation, it is not necessary to subject the thread to a twisting operation.

Other binders, in addition to the sulphur, such as oil, paraffin or sizing solutions, may be added to the thread before the knitting, weaving or other textile operations, if the treatment to which the thread is subjected warrants it.

After the knitting, weaving, or other textile operation, the sulphur and/or other binder may be removed by a suitable solvent and the fabric may be treated as desired to give it the desired color and characteristics. The threads of the fabric produced as described are made up of substantially parallel filaments, rather than twisted filaments, and are in a loose, fluffy condition. The fabric produced in this manner is a lighter and more fluffy material, having a greater covering power per pound of yarn used than in the case of artificial yarn produced by the usual procedure. By omitting the twisting step the "hairing" which results from high twists is avoided and the resulting fabric is fuller and has a warmer feeling due to the air spaces in the yarn.

Although a specific reference has been made to the treatment of artificial silk from the viscose process, in which sulphur is the binder, it is not intended to restrict the invention to this particular embodiment, since it may be used in many modified forms or ap-

plied to other types of yarn, for example, a desulphurized yarn, or a yarn containing no sulphur, may be coated with a binder and may be used without twisting, in making a fabric, after which the binder may be removed to produce a fabric of improved characteristics.

The terms used in describing and claiming our invention have been used in their descriptive sense and not as terms of limitation and it is intended to include all equivalents of these terms within the scope of the appended claims.

What we claim is:

1. A method for producing a fabric of artificial cellulosic material, comprising precipitating the filaments with a binder of sulphur only, forming the precipitated filaments into a fabric without twisting, and thereafter removing the binder from the filaments.

2. In the production of a fabric from artificial cellulosic material, the steps comprising weaving or knitting an untwisted precipitated cellulosic thread containing a binder of sulphur only to form the fabric and thereafter dissolving the binder from the threads of the fabric.

3. A method for producing fabric of artificial cellulosic material comprising precipitating the filaments with a binder of sulphur, forming the precipitated filaments bound together by sulphur only, into a fabric without twisting, and thereafter removing the sulphur binder from the filaments.

4. A method for producing fabric of artificial cellulosic material, comprising precipitating a viscose spinning solution to form filaments of a thread, forming the untwisted precipitated thread bound together by sulphur only into a fabric and thereafter desulphurizing the thread in the fabric.

5. In the preparation of a fabric from artificial thread, the steps comprising preparing parallel filaments of artificial cellulosic material bound together with a binder of sulphur alone to prevent breaking during the working of the thread to produce a fabric, forming the untwisted thread into a fabric, and thereafter removing the binder.

6. A yarn of viscose filaments adapted to be woven, knitted, or otherwise made up into fabric, said filaments being untwisted and held together by sulphur alone without the necessity of pre-treatment with a binder.

In testimony whereof, we have signed our names to this specification.

Dated, March 27, 1931.

ARTHUR L. ERLANGER.

Dated, March 19th, 1931.

DR. MARTIN WADEWITZ.