

UNITED STATES PATENT OFFICE

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DELUSTERED SILK AND METHOD OF DELUSTERING

No Drawing.

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This application relates to the art of delustering real silk or artificial silk and to the resulting products, and is a continuation in part of my co-pending application Serial No. 334,127, filed January 21, 1929, and is made pursuant to the rules of the Patent Office, its purpose being to describe and claim certain products and processes which are closely related to the process and product described and claimed in my original application.

In the following description where the word "silk" is used it will be understood to mean either real silk, artificial silk, rayon or other similar material.

Silk, unless delustered during its manufacture into threads, possesses a high sheen or luster which may or may not be desirable. Efforts have been made heretofore to alter the appearance both of real and artificial silk, it frequently being desirable to reduce the extremely high luster of raw artificial silk so that it more nearly resembles the natural luster of real silk and in some instances it is desired to de-luster real silk to give a softer and less brilliant finish to the finished product. So far as I am aware such efforts have heretofore, not been commercially satisfactory.

I have devised a method of delustering both real and artificial silk, however, which gives a highly desirable product with any desired degree of luster, can be quickly, easily and inexpensively employed and possesses the additional virtue that by its use before the silk is dyed, the amount of dyestuff otherwise required for a desired shade or depth of color can be materially decreased.

The present method may be practiced on silk in the form of thread, hank or skein, or piece goods. It may be carried out before or during dyeing, and after dyeing in the case of certain dyes which are not dissolved or otherwise harmfully affected by the substances employed for delustering.

My invention is based on the discovery that when silk is suitably brought into contact with a liquid to which has been added certain inorganic salts which react to form

an extremely fine, extremely insoluble precipitate, the silk is delustered in proportion to the amount of salts used, its strength and softness as present in the finished product are preserved substantially unimpaired and the delustering is permanent under the ordinary subsequent processing operations and the ordinary service conditions.

As an illustration of my invention and of substances having suitable properties I give the following detailed description:

Alum and barium chloride in the desired amounts are dissolved in hot water and added to a bath. Then the silk is immersed therein under proper temperature conditions and for a length of time sufficient for the delustering action to take place. I prefer to use approximately equal parts of the two above mentioned salts. For nearly complete delustering about one per cent of each salt (based on the weight of silk to be treated) has been found satisfactory but the amounts may be increased several percent with slight additional delustering. For only partial delustering the percentage of salts may be decreased so that only a small fraction of one percent of each salt is present, the degree of delustering varying with the amount of salts used.

I have found that when the delustering and dyeing are carried out in that order the amount of dyestuff required for a given shade or color can be decreased perhaps fifteen percent or more from the amount required by silk not delustered for the same shade or color. In other words, less dye is needed when my delustering material has been used prior to dyeing to obtain a certain shade or color than when the delustering material has not been used. Conversely a different shade or color may be obtained with the same amount of dye.

The temperature of the delustering solution may vary widely, for example, from about 70 degrees F. to about 212 degrees F. but, since both real and artificial silk tend to become somewhat brittle and to lose strength when heated near the boiling point of water, I prefer not to exceed about 180 degrees F. Very good results can be obtained

at temperatures from about 70 degrees F. to about 180 degrees F. and particularly between about 160 degrees F. and about 180 degrees F.

5 The delustering action takes place quickly where the silk is in such form that the threads can be brought properly and quickly into the solution, as in the case of a single thread, and somewhat more slowly in the case of a
10 skein or woven piece where the skein or piece or the solution is agitated to bring about the proper contact.

The product resulting from this method has the much desired subdued sheen or luster, and its strength and softness is substantially unimpaired. In fact, comparative tensile tests made on hosiery which has not been
15 treated by my method and hosiery which has, show that the material which has been treated in accordance with my delustering process
20 has a tensile strength which averages about 12 percent greater than the untreated materials.

When silk is treated as aforesaid some action takes place, which may be due to a chemical phenomenon, by which there is brought about such a combination between the silk and certain substances in the solution that the desired delustering is accomplished.

30 Having thus described my invention in sufficient detail for those skilled in the art to understand and practice the same, what I desire to secure by Letters Patent is defined in what is claimed.

35 I claim:

1. The method of delustering real silk which comprises providing a solution containing approximately equal parts of alum and barium chloride totaling from a fraction
40 of one percent up to about five percent by weight of the silk, and bringing the silk into suitable contact with the solution while maintaining the temperature of the solution between about 70 degrees F. and 212 degrees F.

45 2. The method of delustering real silk which comprises immersing the silk in a solution heated between about 160 degrees F. and about 180 degrees F. and containing approximately equal parts of alum and
50 barium chloride totaling between a fraction of one percent and five percent by weight of the silk, and bringing the silk into the solution in a manner to permit uniform delustering of the silk.

55 3. The method of delustering real silk which comprises providing a solution heated between about 160 degrees F. and 180 degrees F. and containing approximately equal parts of alum and barium chloride totaling between about one and about three percent by
60 weight of the silk, and bringing the silk into contact therewith in a manner to permit uniform delustering of the silk.

4. The method of delustering real silk
65 which comprises immersing the silk in a

solution heated between 70 degrees F. and about 212 degrees F. and containing approximately equal parts of alum and barium chloride totaling between a fraction of one percent and three percent by weight of the silk, 70 and bringing the silk into the solution in a manner to permit uniform delustering of the silk.

5. The method of delustering real silk which comprises providing a solution heated 75 between about 160 degrees F. and about 180 degrees F. and containing approximately equal parts of alum and barium chloride totaling about two percent by weight of the silk, and bringing the silk into contact there- 80 with in a manner to permit uniform delustering of the silk.

6. The method of delustering real silk which comprises immersing the silk in a solution heated between about 70 degrees F. 85 and 212 degrees F. and containing approximately equal parts of alum and barium chloride totaling about two percent by weight of the silk, and bringing the silk into the solution in a manner to permit uniform deluster- 90 ing of the silk.

In testimony whereof I hereunto affix my signature this 22nd day of August, 1930.

WILLIAM H. LORIMER.

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