UNITED STATES PATENT OFFICE.

PETER SCHMID, OF BASEL, SWITZERLAND.

PROCESS FOR UNGUMMING SILK.

No. 848,605. Specification of Letters Patent. Patented March 26, 1907.

Original application filed July 15, 1905, Serial No. 269,877. Divided and this application filed October 17, 1905. Serial No. 283,146.

To all whom it may concern:

Be it known that I, PETER SCHMID, a citizen of the Swiss Republic, and a resident of Basel, Switzerland, have invented a new and useful Process for Ungumming Silk, of which the following is a full, clear, and complete specification.

The present invention is a division of my application for Letters Patent of the United States, Serial No. 269,877, filed July 15, 1905.

This invention relates to a new process for ungumming natural silk, natural-silk waste, and yarns and tissues of natural silk or of natural-silk waste, with the object of freeing these products from the sericin envelop which surrounds the raw natural-silk fiber.

This new process consists in treating the silk to be ungummed with soap-lather in the presence of steam and air for the purpose of softening and rendering soluble the sericin envelop, so that the latter may afterward be eliminated simply by washing in water.

For ungumming, for example, one hundred kilograms of raw-silk hanks I proceed as follows: In the upper part of a not tightly-closed vessel containing about five hundred and eighty liters of water, in which thirty-three kilograms of soap have been dissolved, the silk hanks are suspended on removable and rotatable holders in such a manner that the liquid of the vessel may not at any rate come into contact with the silk hanks. The soapy water of the vessel is then heated by steam or otherwise to the boiling-point in order to transform this water in lather which will rise in the vessel along the hanks contained therein and envelop the latter at all parts, so that the said hanks will be subjected to the combined action of steam, hot air, and soap-lather, the effect of which will be to soften and render soluble the gumming envelop, (sericin envelop.) The transformation of the soapy water in soap-lather may also be aided by injecting air under pressure in the soapy water contained in the vessel. In about thirty-five minutes the sericin envelop will be sufficiently softened and rendered soluble. The hanks are then removed with their holders from the vessel and washed in water. By this first washing-bath about four-fifths of the sericin envelop will be removed, and the removal can be completed by a second treatment with soap-lather and followed by a second washing. Very pure sericin solutions are thus obtained, which can be ultimately employed for dyeing purposes.

Relatively to the old usual process for ungumming silk by hot soap-water with continuous moving of the silk the new process has the following advantages:

First. The ungumming is made in a shorter time and, even for certain articles, in a few minutes.

Second. As the continuous moving of the silk in the soap-water is suppressed—that is to say, as the silk is not drawn to and fro and up and down and is not whipped by the soap-water—the single fibers of the silk remain quiet. They keep their cohesion, and no fluff (floconnement) is produced, and, consequently, the raw silk (grège) treated by the new process can easily be rereeled after the ungumming.

Third. The new process allows even to dissolve the hardened silk-lime, which is often produced by overheated drying, and this was absolutely impossible with the old process.

What I claim is—

1. The herein-described process of ungumming silk, consisting in first making a bath containing soap, then treating the raw silk with the lather only of the said bath in presence of steam and air, the silk not being submerged in the bath, and finally washing the silk thus treated.

2. The herein-described process for ungumming silk, consisting in first making a bath containing soap, then treating the raw silk with the lather only of the said bath obtained by heating said soapy bath to the boiling-point in the presence of air, the silk not being submerged in the bath, and finally washing the silk thus treated.

3. The herein-described process for ungumming silk, consisting in first making a bath containing soap, then treating the raw silk with the lather only of the said bath obtained by heating said soapy bath to the boiling-point and injecting air in said bath, the silk not being submerged in the bath, and finally washing the silk thus treated.

In witness whereof I have hereunto signed my name, this 3d day of October, 1905, in the presence of two subscribing witnesses.

PETER SCHMID.

Witnesses:
ALBERT GRACLE,
AMAND RITTER.