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PROCESS FOR WASHING ARTIFICIAL SILK.

No Drawing. Application filed March 25, 1924. Serial No. 701,866.

To all whom it may concern:

Be it known that I, HERMANN LUMMERZHEIM, a citizen of the German Republic, residing at Wolfen, Kr. Bitterfeld, Germany, have invented certain new and useful Improvements in Processes for Washing Artificial Silk, for which I filed an application in Germany Mar. 12, 1923, and of which the following is a specification.

Artificial silk wound on spools is washed until the washings are neutral for the purpose of removing the residual precipitation liquor. There are three processes for attaining this object. According to the first the spools are placed in water which is flowing or is renewed periodically. Such a washing occupies 6–8 days according to the kind of spool, the mode of winding and the quantity of the material. The second process consists in a systematic sprinkling. This, however, does not completely attain the desired result. On the one hand it involves much manipulation and complicated arrangements, since the spools must be subjected to the water spray in countercurrent, but even when this has been done it frequently happens that the silk is incompletely washed and suffers damage in drying. The process on a large scale is only satisfactory when a very large amount of water is used and the washing period is prolonged. The third process is the so-called pressure washing which rests upon the principle applied in processes of bleaching and dyeing spools and cops. Even in this case there are difficulties with respect to the apparatus and the operation and it is not easy to avoid irregularities in the washing and consequent damage of the silk. The second and third processes above described are examples of what will be referred to hereinafter as washing with water applied by mechanical means as distinguished from the first process according to which the spools are simply immersed in a body of water which is renewed by continuous or periodical replacement.

According to the present invention the several difficulties are overcome by combining the washing with water applied by mechanical means with washing in a vat containing renewed water. For this purpose the spools, preferably mounted on suitable transportable frames, are subjected to a preliminary washing, for instance by pumping water through the perforated spools or by sprinkling, and then are placed in a vat where washing is carried to completion with the aid of renewed water, such as flowing water. The renewal of the water can likewise take place periodically. This subsequent washing may occupy 12–48 hours according to the thoroughness of the preliminary washing. There is achieved in this way a completely uniform washing and all damage to the thread in the subsequent drying is prevented. The consumption of water is smaller than that in any of the known processes since the water used in the subsequent washing, which, of course, may be warm, is used for the preliminary washing. In a properly conducted operation there is so little water used that the acid which it acquires is sufficient to make it advantageous to use this acid water for preparing the precipitation bath.

After having described and ascertained the nature of the invention and in what manner the same is to be performed it is claimed,—

A two-phase process of washing artificial silk which comprises subjecting spools thereof to a relatively short preliminary washing with water forcibly applied by mechanical means and thereafter immersing the spools for a relatively long treatment in a body of water which is renewed until the washing is complete.

In testimony whereof I affix my signature.

DR. HERMANN LUMMERZHEIM.