No. 833,374. PATENTED OCT. 16, 1906.

L. DÉTRÉ.

METHOD OF WINDING SILK TO FACILITATE TREATMENT THEREOF.

APPLICATION FILED OCT. 12, 1905.

Fig. 1.

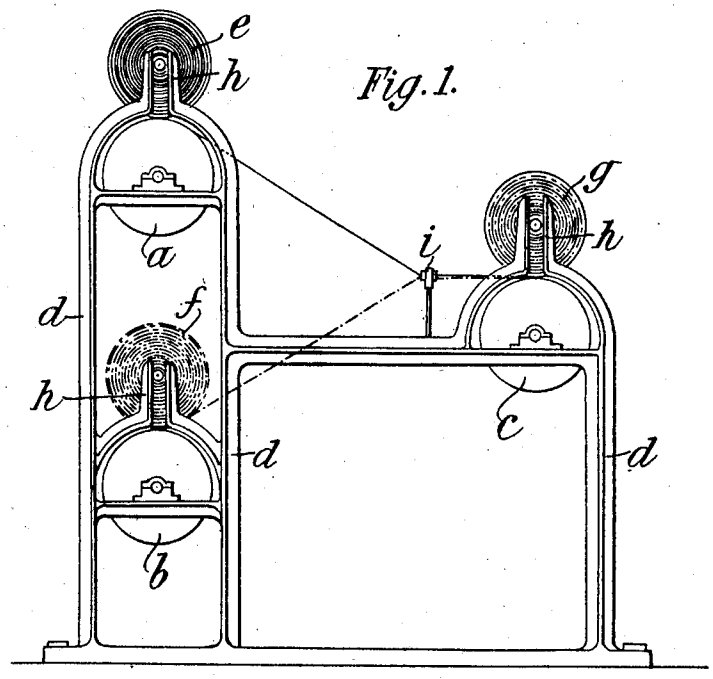
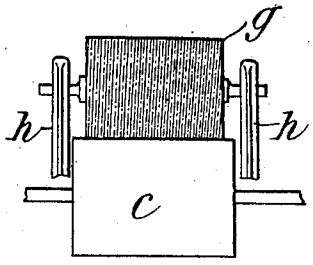


Fig. 2.



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METHOD OF WINDING SILK TO FACILITATE TREATMENT THEREOF.

No. 833,374. Specification of Letters Patent. Patented Oct. 16, 1906.

Application filed October 12, 1905. Serial No. 282,510.

To all whom it may concern:

Be it known that I, LÉON DÉTRÉ, a citizen of the Republic of France, residing in Rheims, Marne, France, have invented certain new and useful Improvements in Winding Silk to Facilitate Treatment Thereof, of which the following is a specification.

This invention consists of an improved method of winding silk to facilitate scouring, degumming, dyeing, bleaching, and like treatment thereof.

In operation such as above mentioned silk undergoes shrinkage, so that if a bobbin of silk thread or yarn is subjected to operations such as referred to in a machine of the kind in which the degumming, dyeing, or other liquid is circulated in contact with the material to be treated, even under high pressure, the silk shrinks, the bobbin is distorted and becomes very hard, and its dimensions are reduced. In this condition the soap solution, dye, or other liquid cannot penetrate it. Thus up to the present it has not been possible to degum, scour, dye, or similarly treat silk in a practical manner in bobbins, as can be done with wool, cotton, and other textile materials. The silk has to be subjected to the said treatment in hanks or skeins, which is a great disadvantage, particularly with fine threads or yarns, and especially in the case of non-twisted silk.

By means of the present invention this drawback of shrinkage of the silk can be overcome, and the scouring, degumming, dyeing, bleaching, or other treatment of silk in bobbin form can be carried out in a practical manner.

The accompanying drawings illustrate an apparatus for carrying out the process.

Figure 1 is a longitudinal elevation. Fig. 2 is a side view of the bobbin and driving-cylinder.

Three cylinders *a*, *b*, and *c* are mounted on a frame *d* and revolved by any suitable mechanism (not shown) at the same velocity. Each drives by simple contact one of the bobbins *e f g*, the shafts of which are held in forks *h*, so that they may rise and fall. On the bobbin *e* is silk, which is unwound at the same velocity as the cotton on the bobbin *f*, the two threads passing through the eye *i*, which guides them to the bobbin *g*, on which they are wound.

When the bobbin *g* is full, it is lifted out of the forks *h* and put through the dyeing, cleaning, or other desired operation, after which it may be replaced, and by rotating the cylinders *a b c* in the reverse direction the silk and cotton may be wound on the bobbins *e* and *f*, respectively.

The invention consists in substance in winding on the bobbin or spool simultaneously with the silk a suitable foreign material, spun or not—such as cotton, linen, wool, or wire—which will not shrink, like silk, in the degumming, dyeing, or other operation.

In carrying the invention into effect I may, for example, proceed as follows: I may employ three cylinders rotating at the same circumferential speed and each driving a bobbin, one of these bobbins carrying the silk to be dyed or treated and the second the cotton or other non-shrinking material. The silk and material are wound off from these two bobbins on the third, on which the silk is subjected to the various treatments desired. The silk and foreign material may advantageously be cross-wound on the bobbin or spool on which it is to be treated. The foreign material wound with the silk will, especially if the bobbin is cross-wound, form a trellis interposed between the spirals or convolutions of the silk. The bobbins are thus rendered readily permeable and will keep their shape and can be successfully subjected to the operations of scouring, degumming, bleaching, dyeing, or other treatment with liquids or solutions. When the treatment is finished, the bobbin may be wound off on an ordinary bobbin or fly-flame to separate the silk thread or yarn from the material wound with it.

It is preferable to employ a cheap material—such as cotton, for example—for winding on the bobbin or spool with the silk, so that such material may serve for a number of successive operations.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

The method of scouring, degumming, dyeing, bleaching or similarly treating silk in

bobbin form, which consists in winding on the bobbin or spool simultaneously with the silk a spun or other foreign material which does not shrink like silk in the same treatment, and submitting the same to the usual operations for scouring, degumming, dyeing, bleaching or the like.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

LÉON DÉTRÉ.

Witnesses:
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