May 17, 1938. J. I. TAYLOR 2,117,997

SKEIN

Filed April 16, 1937

Fig. 1.

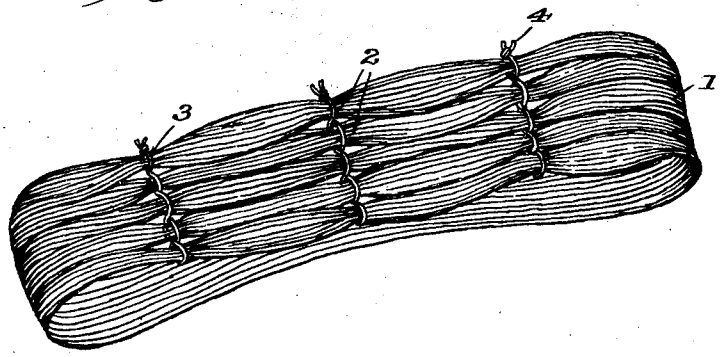


Fig. 2.

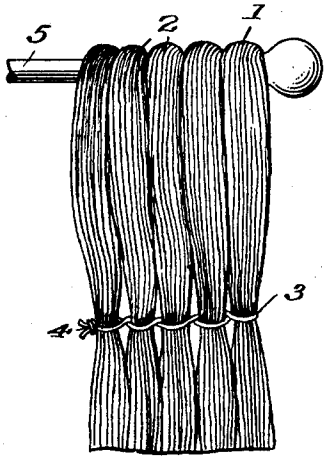
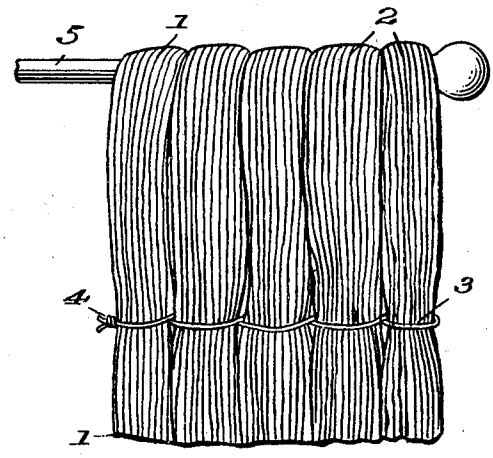


Fig. 3.



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SKEIN

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2 Claims. (Cl. 28—21)

In producing filaments and yarns from cellulosic solutions, it is customary to extrude the solutions through spinnerets and preliminarily harden the filaments or yarns in a bath after which they are collected on spools, reels or in spin pots. In the latter two processes the yarn bodies form hanks or skeins and in this form the yarn is subjected to a series of after treatments such as desulphurization, deacidification, bleaching, washing, drying and the like.

One of the important problems of the industry is to devise means for maintaining the hanks or skeins in condition during these several steps of manufacture to insure that the filaments or threads will not become tangled and to allow the yarn bodies to be manipulated without becoming linked or hooked with one another. It is also necessary to retain the hank or skein so that its individual strands are easily separated during the final drying and inspection, although it is preferable to allow the convolutions of the hanks or skeins to be slightly compressed during the several wet frequent steps.

Heretofore, the hanks or skeins have been laced at several points around their circumference by dividing the hank into a plurality of approximately the same sized bundles and passing a tie thread of rayon over and under the several bundles, the ends of the lacing being tied at the side of the hank. This method is only fairly satisfactory for the reason that it is necessary to provide for the opening up of the hank during its drying and final inspection. It is, therefore, necessary to make the lacings long and loose enough so that they will permit separation and opening up of the skein. Consequently these very loose lacings become bothersome and are in the way when the skeins are compressed in the wet treatment steps.

To obviate these disadvantages of the usual lacing, it is proposed to do away with the rayon lacings and in place thereof use lacings comprising elastic cords or strands which may be made of rubber, latex or other elongatable filaments.

To illustrate the invention attention is directed to the drawing wherein

Fig. 1 illustrates a completely laced skein;

Fig. 2 shows the skein compressed or constricted by the lacing;

Fig. 3 discloses the skein on the inspection arm in spread or opened condition.

In the drawing in which like numerals of reference indicate like parts 1 refers to a conventional skein or hank of yarn which is adapted to be used in the various wet treatments such as may be desired. These hanks or skeins are usually formed by being collected on a reel with an open or diamond wind imparted thereto by the traverse guide. The skeins are then laced at these open places and divide the skein into a plurality of bundles or bunches 2 of approximately the same size. The lacing in the invention of applicant is done with a resilient strand 3 which passes alternately over and under the bundles with its free ends tied into a simple overhand surgeon's or running knot 4.

The lacing or tie cords 3 may be elastic threads, rubber, latex or other stretchable strands or filaments, the major requisite being that they are capable of being stretched and thereafter returned to their original length.

In placing the lacings through the skein, the operator uses as short a length of resilient cord as possible so that after the knot is tied at its ends, the skein or hank will be slightly compressed. In this condition the several steps of after treatment take place. During inspection, however, when the skeins are placed on a conventional inspection arm 5, the hanks are readily opened up for examination for defects as shown in Fig. 3.

While I have described my improvements in great detail and with respect to preferred forms thereof, I do not desire to be limited to such details or forms since many modifications and changes may be made and the invention embodied in widely different forms without departing from the spirit and scope thereof in its broader aspects. Hence I desire to cover all modifications and forms coming within the language or scope of any one or more of the appended claims.

What I claim as new and desire to secure by Letters Patent, is:

1. As a new article of manufacture, a skein of artificial silk yarn divided into bundles and elastic strands tied in a plurality of places throughout its circumference by passing said strands over and under the separate bundles of the yarn, the ends of each strand being knotted.

2. A skein of artificial silk consisting of a bundle of filaments, the said filaments being longitudinally divided into a plurality of separate bunches, and an elastic strand alternately passing over and under said separate bunches of filaments, the ends of said strand being knotted at the outside of said bundle.

JOSEPH I. TAYLOR.