June 3, 1930. H. WINKELMANN 1,761,860

PROCESS AND APPARATUS FOR THE PRODUCTION OF ARTIFICIAL THREADS BY THE CUPRO-AMMONIUM STRETCH SPINNING PROCESS

Filed Jan. 19, 1928

FIG. 1

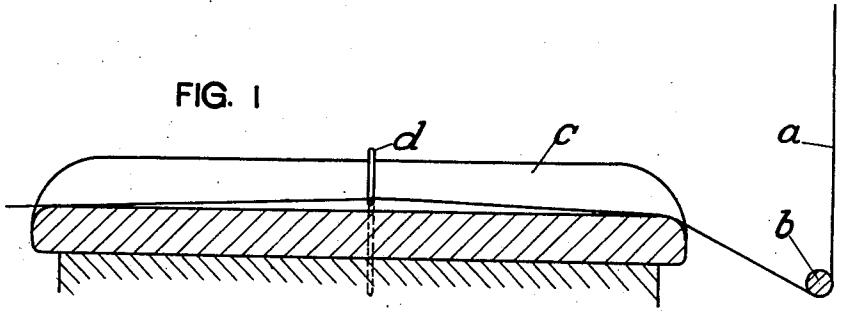


FIG. 2

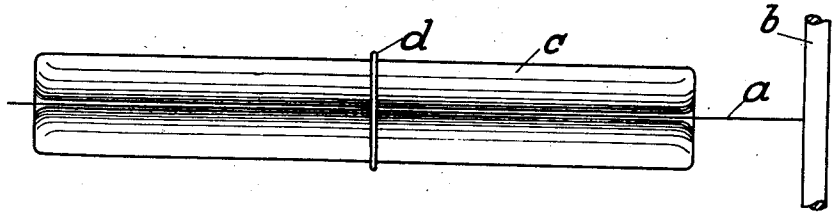


FIG. 3

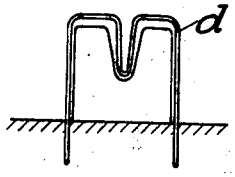
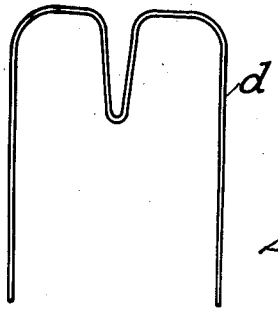


FIG. 4



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UNITED STATES PATENT OFFICE

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PROCESS AND APPARATUS FOR THE PRODUCTION OF ARTIFICIAL THREADS BY THE CUPRO-AMMONIUM STRETCH-SPINNING PROCESS

Application filed January 19, 1928, Serial No. 247,845, and in Germany January 20, 1927.

This invention relates to the production of artificial threads by the cupro-ammonium stretch spinning process, and has for its principal object to improve the quality of the threads obtained. The invention relates more particularly to that part of the process in which the threads are subjected to an acid treatment.

It has been suggested previously to subject artificial threads to an acid treatment carried out in channel shaped members of stoneware, porcelain and the like. It has also been suggested to carry out the acid treatment by conducting the threads through a trough containing acid, the walls of the trough being provided with narrow slits through which the threads were passed into and out of the trough.

It has now been found that if the threads are passed through a thread guide and simultaneously subjected to the acid treatment, that this has a considerable influence upon the quality of the threads with respect to their grain or structure and textile properties.

According to the present invention, therefore, the artificial threads are passed through one or more thread guides while being subjected to an acid treatment in troughs or channel-shaped members, the position of the guides being adjustable in the said troughs or members. The guides lift the threads from the bottom of the trough or channel-shaped member. One or more of these thread guides may be employed and they are preferably made of acid resisting material, for example acid resisting steel, and may be made out of wire or strip material.

The invention is illustrated by way of example in the accompanying drawings, in which:

Figure 1 shows in longitudinal section an acid treatment channel-shaped member with a thread guide;

Figure 2 is a plan of Figure 1;

Figure 3 is a side view of Figure 1;

Figure 4 shows the thread guide to a larger scale.

A thread *a* is shown as being delivered from a suitable spinning mechanism and passing around a guide rod *b* to a channelled member *c*. The threads are in known manner subjected to an acid treatment in the channeled member. A thread guide *d* fits over the walls of the channeled member and has a central portion which projects into the channeled member and into close proximity with the bottom thereof in order to lift the thread more or less from the bottom. This depending portion is substantially V-shaped, the point of the V, however, being rounded off. In the construction shown, the thread guide is shown as being made of wire bent into a shape so that it can be placed accurately in position and retained firmly over the channelled member. The simple form of thread guide permits its use with acid treatment apparatus already in use and the thread guide may be disposed at any desired position in the apparatus in a perfectly simple manner. This latter feature is of importance as it has been found that the particular position of the thread guide affects the grain or structure of the artificial threads, soft or hard artificial threads in fact being obtained as desired according as to whether the thread guide is disposed in the channelled member nearer to or further away from that end at which the thread is conducted into the channelled member. These effects could not be obtained in the previous devices and when acid treatment troughs were employed with slits formed in their walls as mentioned above, these slits which acted as thread conductors were not able to produce the results which can be obtained by the present process owing to the fact that the slits did not act as guides for the threads during the time that the threads were actually being subjected to the acid treatment. As a matter of fact, the slits owing to their position only acted as guides for the threads before and after the acid treatment.

The thread guides employed according to the present invention can be secured conveniently and firmly to the channelled member and do not affect the flow of the acid through the channelled member and the threads obtained are free from irregularities and are of absolute uniform quality.

What I claim is:

1. A process for the production of artificial

threads by the cupro-ammonium stretch spinning process, consisting in conducting the threads through a thread guide in a channelled member and subjecting the said threads simultaneously to an acid treatment in said channeled member.

2. A process for the production of artificial threads by the cupro-ammonium stretch spinning process, consisting in conducting the threads through at least one thread guide in a channeled member and subjecting the said threads simultaneously to an acid treatment in said channelled member.

3. A process for the production of artificial threads by the cupro-ammonium stretch spinning process, consisting in conducting the threads through a thread guide adjustably mounted in a channelled member and subjecting the said threads simultaneously to an acid treatment in said channelled member.

4. Apparatus for the production of artificial threads by the cupro-ammonium stretch spinning process, comprising an acid treatment channelled member and a thread guide disposed therein lifting the thread from the bottom thereof.

5. Apparatus for the production of artificial threads by the cupro-ammonium stretch spinning process, comprising an acid treatment channelled member and at least one thread guide disposed therein lifting the thread from the bottom thereof.

6. Apparatus for the production of artificial threads by the cupro-ammonium stretch spinning process, comprising an acid treatment channelled member and a thread guide adjustably disposed therein lifting the thread from the bottom thereof.

7. Apparatus for the production of artificial threads by the cupro-ammonium stretch spinning process, comprising an acid treatment channelled member and at least one thread guide adjustably disposed therein lifting the thread from the bottom thereof.

8. Apparatus for the production of artificial threads by the cupro-ammonium stretch spinning process, comprising an acid treatment channelled member and a thread guide fitting over said member and having a depending V-shaped portion extending into said channelled member.

9. An apparatus for the production of artificial thread by the cupro-ammonium stretch-spinning process, comprising a channel-shaped acid treatment member and a thread guide adapted to be positioned in said member and adjustable along its length.

10. An apparatus for the production of artificial thread by the cupro-ammonium stretch-spinning process, comprising a channel-shaped acid treatment member and a thread guide adapted to be positioned in said member and to life the thread from the bottom thereof, said thread guide being adjustable along the length of the acid treatment member.

In testimony whereof, I have signed my name to this specification, this 5th day of January, 1928.

DR. HEINZ WINKELMANN.