

UNITED STATES PATENT OFFICE

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DRYING PROCESS

No Drawing.

Application filed September 11, 1931. Serial No. 562,427.

My present invention has to do with a new method for drying yarn on spools.

One object of this invention is to provide a spooled yarn with a technically even shrinkage.

Other objects will become apparent from a study of the following specification.

In the manufacture of artificial silk by the viscose process, the solution is extruded through fine openings in a spinneret into a fixing or coagulating bath. Here the filaments are hardened to a certain degree, and then wound upon some type of holder, for example, a foraminated spool or bobbin. The yarn thus formed must be wet-treated in order to free it from chemicals, and dried. It has been found that this drying tends, ordinarily, to cause an uneven shrinkage of the formed filaments. It is to overcome this unevenness that I have devised my new process.

As one method of applying my new process, the following may be considered. The filaments are formed and collected on normal spools, which may or may not be perforated. After the customary wet-treatment the spools containing the yarn are dried very slowly, for example, at a temperature of from 20° to 30° C., and an air humidity of from 60 to 80%. No wrappings are employed on the filaments during this drying process.

The dried yarn is then twisted, from the spool in a loose body, upon another spool. This yarn is then rewet (by spraying or dipping, for example) and again dried very slowly as noted above.

As an example of my process, spool 200 mm. long holding viscose yarn of 150 denier, 32 filaments (about 370 grams of yarn per spool) is dried for a period of approximately 60 hours at a temperature of from 20° to 30° C., and a relative humidity of about 50 to 70% until the moisture content is about 10 to 18%. After twisting and rewetting in the manner outlined above, this type of slow drying is repeated. No wrapping of any type is employed.

Although the description of my invention has been written with respect to the viscose filament-forming process above, it is to be understood that I do not desire to limit my

invention thereby. This process may also be used where other processes requiring wet-treatment and drying of materials on spools are employed.

Having now set forth my invention is required by the patent statutes, what I desire to claim is:

1. In a process for producing a yarn with a technically even shrinkage, the steps of winding the yarn upon a bobbin spool, or like device, wet treating the yarn thus wound, drying the yarn slowly at a temperature of from 20°-30° C., and at a humidity of approximately 80% twisting into a loose body onto another holder, rewetting the yarn, and redrying the same slowly.

2. In a process of the class described, the steps of spinning a viscose solution directly onto spools, wet-treating the yarn thus spun, drying slowly at a temperature of from 20° to 30° C., and at a humidity of 80% or over, rewinding in a loose body onto another spool, and then rewetting and redrying the yarn slowly.

3. In a process for producing artificial yarn with a technically even shrinkage, the steps of wet treating the filaments, drying them slowly at approximately room temperature and in an atmosphere possessing a humidity of 60% or over, rewinding the yarn body so that the filaments formerly on the outside are on the inside, rewetting the yarn, and redrying it.

4. A process as set forth in claim 3, wherein the second drying is also at approximately room temperature and in an atmosphere of relatively high humidity.

In testimony whereof I affix my signature.

Dr. RICHARD ELSSNER.