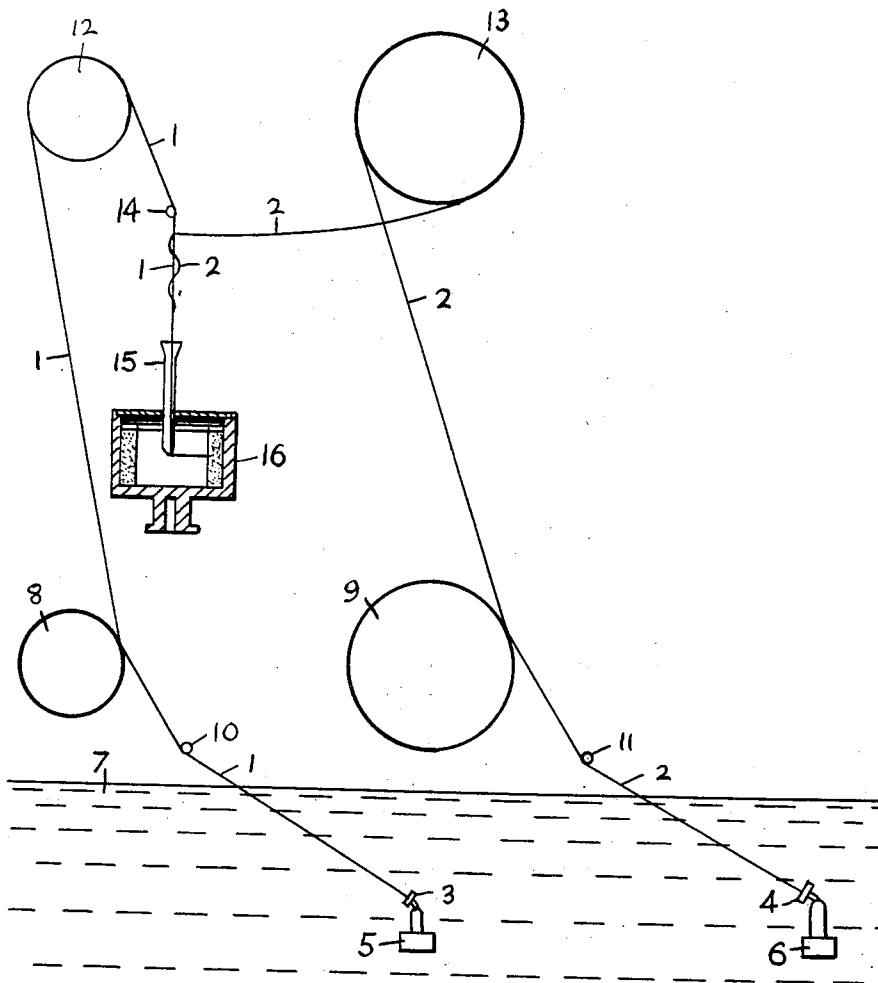


June 6, 1961

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MANUFACTURE OF COMPOSITE YARNS

2,986,868

Filed March 20, 1957



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MANUFACTURE OF COMPOSITE YARNS

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Filed Mar. 20, 1957, Ser. No. 647,410

Claims priority, application Great Britain Mar. 28, 1956

4 Claims. (Cl. 57-157)

This invention relates to the manufacture of composite yarns from viscose and particularly to the production of a bouclé yarn in which a core thread has a second thread twisted loosely around it, to give a knotted and curled appearance.

A process is disclosed in U.S. Patent No. 2,079,524 in which two threads are fed at different speeds into the funnel of a spinning box to form a yarn. The core thread, which is the slower moving of the two, enters the funnel at a small angle to the vertical while the second thread, the faster moving one, runs vertically downwards into the funnel. The second thread enters the funnel at least 30 percent faster than the core thread.

The present invention enables a greater difference in speed between the two threads to be employed. The result is that the second thread is twisted around the core thread to give a more bulky yarn, but the second thread does not form slack loops which might interfere with handling the yarn in subsequent processes.

The invention comprises a process for making a textile yarn consisting of one thread twisted loosely around a core thread, by feeding a core thread, freshly formed from viscose, downwards at an angle of not greater than 10 degrees to the vertical into the funnel of a centrifugal spinning box, and feeding at a higher rate than the core thread a second thread, freshly formed from viscose, at an angle of at least 30 degrees to the vertical, to join the core thread before the threads enter the funnel. The threads may be stretched by different amounts before they join each other and they may be of different deniers and different numbers of filaments. Preferably the second thread meets the core thread at an angle of from 80 degrees to 90 degrees to the vertical.

An example of an apparatus for carrying out the process of the present invention is shown in the accompanying diagrammatic drawing which is a front elevation partly in section. In this two threads 1 and 2 are formed by extruding viscose from two jets 3 and 4, by means of two pumps 5 and 6, into a regenerating bath 7. The two threads are withdrawn from the bath by two godets 8 and 9 and pass round two thread guides 10 and 11 respectively between the jets and the godets. From the godets 8 and 9 the two threads pass respectively to two more godets 12 and 13, each thread being stretched between the two godets around which it passes. Thread 1 passes downwards from godet 12 over a thread guide 14 to the funnel 15 of a spinning box 16. Thread 2 passes from godet 13 to join thread 1 at some point below the thread guide 14, and is twisted around thread 1 as the two threads pass together into the funnel and thence into the box, the box being rotated in the usual way to form a yarn cake.

The following is a specific example of the use of this particular piece of apparatus. The two pumps 5 and 6 have throws of 6.2 grams per minute and 20.6 grams

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per minute and the jets 3 and 4 have respectively 48 and 60 holes each .003 inch in diameter. The viscose contained 7.5 percent cellulose, 6.0 percent soda and had a salt figure of 5.5. After extrusion the threads were immersed for 18 inches in the bath which contained 10 percent acid, 1.3 percent zinc sulphate and 20 percent sodium sulphate. The bath was kept at 48° C. and its surface tension was 40 dynes. The two godets 8 and 12 around which the thread 1 passed have diameters of 4¼ inches and 4¾ inches and were rotated at 54 r.p.m. and 70 r.p.m. respectively. The other two godets 9 and 13 around which thread 2 passed are both of 6¾ inches diameter and were rotated at 54 r.p.m. and 70 r.p.m. respectively. The spinning box into which the threads finally passed had a diameter of 6½ inches and was rotated at 7,000 r.p.m.

What we claim is:

1. A process for making a bouclé textile yarn having a knotted and curled appearance and consisting of one thread twisted loosely around a core thread, which comprises stretching a freshly formed core thread of regenerated cellulose, feeding the stretched core thread downwards at an angle of not greater than 10 degrees to the vertical into the funnel of a centrifugal spinning box, stretching a second freshly formed thread of regenerated cellulose, feeding the second thread at a higher rate than the core thread and at an angle of at least 30 degrees to the vertical to a point on the path of the core thread above the entrance to the funnel, and rotating the spinning box to produce an annular package of the yarn.

2. A process for making a bouclé textile yarn having a knotted and curled appearance and consisting of one thread twisted loosely around a core thread, which comprises stretching a freshly formed core thread of regenerated cellulose, feeding the stretched core thread downwards at an angle of not greater than 10 degrees to the vertical into the funnel of a centrifugal spinning box, stretching a second freshly formed thread of regenerated cellulose, feeding the second thread at a higher rate than the core thread and at an angle of at least 30 degrees to the vertical to a point on the path of the core thread above the entrance to the funnel, and rotating the spinning box to produce an annular package of the yarn, the process being further distinguished in that the stretch imparted to the core thread is different from that imparted to the second thread.

3. A process for making a bouclé textile yarn having a knotted and curled appearance and consisting of one thread twisted loosely around a core thread, which comprises stretching a freshly formed core thread of regenerated cellulose, feeding the stretched core thread downwards at an angle of not greater than 10 degrees to the vertical into the funnel of a centrifugal spinning box, stretching a second freshly formed thread of regenerated cellulose, feeding the second thread at a higher rate than the core thread and at an angle of from 80 degrees to 90 degrees to the vertical to a point on the path of the core thread above the entrance to the funnel, and rotating the spinning box to produce an annular package of the yarn.

4. A process for making a bouclé textile yarn having a knotted and curled appearance and consisting of one thread twisted loosely around a core thread, which com-

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prises stretching a freshly formed core thread of regenerated cellulose, feeding the stretched core thread downwards at an angle of not greater than 10 degrees to the vertical into the funnel of a centrifugal spinning box, stretching a second freshly formed thread of regenerated cellulose, feeding the second thread at a higher rate than the core thread and at an angle of from 80 degrees to 90 degrees to the vertical to a point on the path of the core thread above the entrance to the funnel, and rotating the spinning box to produce an annular package of the yarn, the process being further distinguished in that the stretch imparted to the core thread is different from that imparted to the second thread. 10

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