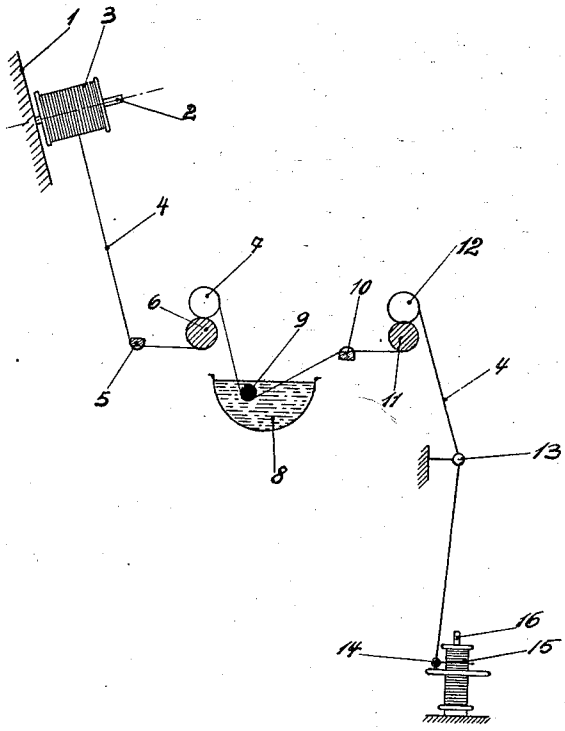
April 17, 1928.

1,666,090

F. J. GAHLERT

PROCESS FOR THE AFTER TREATMENT OF FRESHLY SPUN ARTIFICIAL SILK

Filed July 28, 1926



Inventor

Franz Josef Gahlert

by

Pennie, Davis, Marvin & Edmonds

Attorneys

Patented Apr. 17, 1928. 1,666,090

UNITED STATES PATENT OFFICE.

FRANZ JOSEF GAHLERT, OF DRESDEN-LOSCHWITZ, GERMANY.

PROCESS FOR THE AFTERTREATMENT OF FRESHLY-SPUN ARTIFICIAL SILK.

Application filed July 28, 1926, Serial No. 125,355, and in Germany June 9, 1925.

This invention relates to a process for treating freshly spun artificial silk and which consists in that the thread of artificial silk is spun again in being stretched and twisted, preferably with application of a softening means or of a solvent.

By this process quite a new thread is produced which possesses special properties. If, for instance, as weft for a fabric, artificial silk is used which has been treated according to this process and which has been wet-twisted, the weft produces an extraordinary solidity of the fabric and produces in combination with the brilliancy of the commonly used warp-silk a peculiarly watered fabric. The solidity of the new artificial silk fabric is so great that this fabric is washable, which is not the case for the hitherto known artificial silk fabrics. This fabric is, therefore, something quite new and, owing to its extraordinary solidity, it can be dyed in the piece, which is a further advantage. Whilst artificial silk fabric of known kind was stretched at the dyeing in the piece, so that the fabric becomes loose and open portions were formed in the piece, just the opposite occurs with the new fabric. The fabric contracts at the dyeing in the piece as the sharply twisted weft-silk contracts. This is the reason why the fabric possesses such wonderful closeness and solidity and is washable.

In the form of execution of the process illustrated in the accompanying drawing the thread of artificial silk is softened by a liquid, for instance water. Evidently other softening means might be used.

The freshly spun thread of artificial silk is re-spun again in such a manner that it is made to pass through a stretching device comprising a water trough for wet-spinning. As a thread of artificial silk is generally very brittle it could not be stretched if, prior to the stretching, it would not have been softened. This softening is effected, for instance, by moistening in the water-trough whereby the thread of artificial silk loses immediately its brittleness and becomes soft and supple, so that it is lengthened by the stretching cylinder owing to its stretchability, whereby a very fine and durable fabric of artificial silk is obtained.

Referring to the accompanying drawing the silk bobbins 3 are placed on pins 2 fixed in the bobbin board 1. The silk thread 4 is unwound from the bobbin 3, guided over a glass thread-guide 5 to the pulling-off cylinder 6, to pass between this pulling-off cylinder and the pressing cylinder 7. Coming out from between the pulling-off cylinder and pressing cylinder the thread of artificial silk passes around a glass rod 9 which is immersed in the water in trough 8 so that the thread is moistened before, by the thread guide 10, it is guided to the stretching cylinder 11 around which the thread is wound. In this position the thread is pressed by the pressing cylinder 12. The thread 4 of artificial silk goes then through the thread guide 13 to the ring-spinning eye 14 to be wound upon the bobbin 15 which is mounted on the spindle 16.

The stretching cylinder 11 rotates at higher speed than the pulling-off cylinder 6 so that the thread is stretched between these two cylinders. The brittle thread 4 of artificial silk is made supple by being dipped into the water-trough 8 so that it becomes extensible. According to the depth at which the thread is dipped into the water-trough, its extensibility becomes greater or lesser so that it can be stretched more or less. The interval between dipping point and stretching cylinder is preferably variable so that it can be adapted to the degree of moistening, the stretched thread drying when it travels through this interval. The resistance of the thread is then increased so that it does not break at the spinning. The thread could be dried artificially. As the thread is spun at a more or less dissolved state owing to the moistening, the spun thread of artificial silk possesses other properties which assert themselves specially at sharp twisting. The strongly twisted thread of artificial silk, produced according to this wet-spinning process, does not form running knots, it does not coil and it is distinguished by great durability and especially by the effect it produces in the finished fabric.

The cylinders 6, 7 supply the dry thread and the stretching cylinder 11 and pressing cylinder 12 pull the wet thread off, so that breaking of the thread can be avoided by correctly regulating the ratio of transmission in the stretching mechanism.

I claim:—

1. A process for treating freshly spun artificial silk, consisting in treating the thread of artificial silk with a softening agent, in

stretching the softened thread, and in retwisting this thread.

2. A process for treating freshly spun artificial silk, consisting in softening the thread of artificial silk by means of water through which the thread is made to pass, in stretching the softened thread, and in retwisting this thread.

3. A process for treating freshly spun artificial silk, consisting in softening the thread of artificial silk by means of water through which the thread is made to pass, in stretching the softened thread, and in submitting this thread to strong twisting.

In testimony whereof I affix my signature.

FRANZ JOSEF GAHLERT.