

UNITED STATES PATENT OFFICE.

ERNST BECHTEL, OF HANAU, GERMANY, ASSIGNOR TO THE FIRM OF HANAUER KUNSTSEIDE-FABRIK G. M. B. H., OF HANAU, GERMANY.

PROCESS OF MANUFACTURING ARTIFICIAL THREADS.

988,430.

Specification of Letters Patent.

Patented Apr. 4, 1911.

No Drawing.

Application filed February 19, 1909. Serial No. 478,766.

To all whom it may concern:

Be it known that I, ERNST BECHTEL, a subject of the German Emperor, and resident of Hanau-on-the-Main, Germany, have invented certain new and useful Improvements in the Process of Manufacturing Artificial Threads, of which the following is a specification.

This invention relates to improvements in a process of manufacturing artificial threads from solutions of cellulose with ammoniureted cupric oxid.

As is known in the art, the solution of cellulose with ammoniureted cupric oxid heretofore used in the manufacture of artificial threads has the tendency to coagulate into drops when flowing out from a receptacle in a fine stream. Therefore, it was necessary, in order to make threads, to force the said solution through very fine apertures. It was also necessary to keep the solutions at low temperatures.

The object of the present improvements is to provide a process in which the use of such fine apertures and of the low temperatures is dispensed with. For this purpose, substances of a slimy or gelatinous nature are added to the said solution of cellulose, by which the tendency of the solution to coagulate into drops is removed, so that it can be spun into threads in a similar way as honey. The substances which have proved particularly useful for the said purpose are sodium ricinoleate, glycerin, or gelatin. By adding substances of the character described to the solution of cellulose with ammoniureted cupric oxid the capillary tubes heretofore necessary for spinning the said solution, and the filtration of the solution are dispensed with, because even foreign matter of comparatively large size does not prevent a continuous spinning of the threads by tearing the latter, and furthermore the pliability and the silky luster of the threads is improved.

In United States Letters Patent No. 798,868 it has been suggested to add to the solution of cellulose with ammoniureted cupric oxid a solution of silk gum such as is obtained by boiling raw silk. Thereby the thread which is in the usual way forced through capillary tubes and coagulated by

means of acids, assumes a certain similarity to the natural silk, particularly in so far as it is thereby rendered impermeable to water. However, such a liquor has no slimy character and, therefore, it is not possible, as in the process of the present invention, to make the solution more viscid and thereby to permit the same to be spun without using capillary tubes. Furthermore, according to the present invention, the substances added to the solution of the cellulose are not intended to remain within the threads, but leave them during the coagulating and washing process, their purpose being exclusively to make the solution more viscid, and to increase its cohesion, so that it can be spun without capillary tubes.

Example: A solution of 1.6 kg. of sodium ricinoleate in 3 liters of warm water, or a solution of 0.5 kg. of cupric ricinoleate in 2 liters of a 15 per cent. solution of ammonia, are added to 200 kg. of an 8 per cent. solution of cellulose in ammoniureted cupric oxid, whereupon the mixture is thoroughly stirred about one or two hours. To produce the best results in spinning the solution, the amount of the substances added to the solution of the cellulose may be varied according to the quality of the latter. Under ordinary circumstances good results will be obtained, if the substances added to the solution of the cellulose amount to 10 per cent. of the cellulose.

Having thus described the invention what is claimed is—

The herein described composition of matter, from which artificial threads may be spun, consisting of a solution of cellulose and ammoniureted cupric oxid, and sodium ricinoleate, the latter being added in such amount that the slimy character of the solution is greatly increased and to such a degree that the solution can be spun without the use of capillary tubes and without pressure, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ERNST BECHTEL.

Witnesses:

FRANZ HASSLACHER,
ERWIN DIPPEL.