

UNITED STATES PATENT OFFICE.

CHARLES A. ERNST, OF LANSDOWNE, PENNSYLVANIA.

PROCESS OF MANUFACTURING FILAMENTS FROM VISCOSE.

No. 798,027.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES A. ERNST, of Lansdowne, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in the Process of Manufacturing Filaments from Viscose, of which the following is a specification.

In processes of this character it is a common practice to employ an acid solution for the bath in which the primary "setting" of the viscose filament as it issues from the spinneret is effected. It has been found, however, that the use of an acid-bath tends to weaken the product whenever the filaments while still moist with the acid solution are exposed to the air for any considerable length of time, the weakening effect being more and more marked in accordance with the strength of the acid.

It is, however, desirable to eliminate the free or surplus alkali from the viscose at the primary step of the operation (usually referred to under the term "setting") in order to prevent the filaments from cementing together. I have found that the removal of the alkali may be accomplished with sufficient rapidity for the purpose of the setting-bath by the use of a proper alkaline reagent and that by this method the weakening which results from protracted exposure to the atmosphere after treatment by an acid setting reagent is avoided. To this end I employ as a setting-bath a solution of an alkaline salt or salts of such character as to take up to the desired extent the free or surplus alkali contained in the viscose filaments without, however, developing any deleterious reactions. I preferably employ a bath formed of an

aqueous solution of bicarbonate of soda and bicarbonate of ammonia, together with ammonium sulfate. Preferably this solution is saturated with all these ingredients at ordinary temperature.

The free or surplus caustic alkali of the viscose is rapidly removed to the desired extent by the unsatisfied carbonic acid of the bicarbonate, the action of the ammonium sulfate being to coagulate the viscose.

The filaments which have been set by a solution of the above-described character and spun in the usual manner are then reverted, preferably, by means of a solution of ammonium sulfate. Thereafter the usual washing and drying processes are employed.

Having thus described my invention, I claim—

1. The hereinbefore-described process of setting viscose filaments which consists in immersing them in a bath of an alkaline bicarbonate.

2. The hereinbefore-described process of setting viscose filaments which consists in immersing them in a bath containing an alkaline bicarbonate and a coagulating reagent.

3. The hereinbefore-described process of setting viscose filaments which consists in immersing them in a bath containing bicarbonate of soda and bicarbonate of ammonia in conjunction with ammonium sulfate.

In witness whereof I have hereunto signed my name, at Philadelphia, in the State of Pennsylvania, this 19th day of April, 1905.

CHARLES A. ERNST.

Witnesses:

JAMES H. BELL,

ANNA F. GETZFREAD.