

UNITED STATES PATENT OFFICE

2,102,933

SPINNING LIQUOR FOR ARTIFICIAL SILKS

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No Drawing. Application May 4, 1932, Serial
No. 609,332. In Japan May 14, 1931

4 Claims. (Cl. 134—1)

This invention relates to the method of manu-
facturing artificial silk, which consists in press-
ing out fibroin solution for spinning intermingled
with alkyl ester or alkyl salts, into salt solution
or acidic solution from a nozzle. The object
thereof is to regenerate silk yarn of excellent
quality artificially by keeping the original solu-
tion thick and viscous, that is, in good condition
for spinning, without destroying the fibroin sub-
stance excessively even after the lapse of time.

The main object of my invention is to provide
a method of manufacturing artificial silk of ex-
cellent quality, uniformity and durability.

In the art as heretofore practiced, silk fibre or
fibroin is dissolved in an alkaline solution con-
taining a metal such as copper, nickel, etc., and
the solution is rendered more fluid by various
means reducing its viscosity in order to avoid
the excessive decomposition of the fibroin with
the passing of time, which renders it impossible
to spin it on an industrially large scale as regen-
erated silk. Even if spun and coagulated, it can-
not be elongated finely during coagulation and
the product has inferior quality with defects in
tensile strength, denier size and lustre. Accord-
ing to the present invention it is possible to re-
generate silk yarn of superior quality on an in-
dustrially large scale, removing the above defects
by intermingling methyl acetate, amyl acetate,
ethyl acetate and propyl acetate and other alkyl
esters of formic acid, oxalic acid, citric acid, tar-
taric acid and acetic acid or the chloride with
the original solution for spinning which has silk
fibre dissolved therein.

The following is an example of carrying out
this invention into practice:—

Add 0.1–10% of alkyl ester, as for example,
methyl acetate, amyl acetate, ethyl acetate and
propyl acetate, to the known solvent for silk fibre
prepared by dissolving copper hydroxide and
nickel hydroxide in caustic alkali solution with
the addition of one or two of glycerin, glycol,
sodium potassium tartrate and sugar and then
proceed to dissolve fibroin in the solvent con-
taining the alkyl ester thus prepared so as to

form the desired solution which is of suitable
viscosity for use. Take this solution and use the
same as the original solution and press it out into
acidic salt or acidic solution from a nozzle. Then,
coagulate it, elongating it.

In the above example, substantially the same
effect may be obtained by adding alkyl ester
after silk fibre is dissolved in the solvent.

Having now fully disclosed my invention, I
claim:—

1. A spinning liquor for artificial silk compris-
ing a solution of fibroin in an alkaline solution
of a metallic compound of the class consisting of
copper and nickel hydroxides with an alkyl ester
of the class consisting of methyl acetate, amyl
acetate, ethyl acetate and propyl acetate and
containing an added organic compound consist-
ing of glycerine.

2. The method of preparing a spinning liquor
for artificial silk, which consists in mixing an al-
kaline solution of a metallic compound of the
class consisting of copper and nickel hydroxides
with an alkyl ester of the class consisting of
methyl acetate, amyl acetate, ethyl acetate and
propyl acetate and dissolving fibroin in the re-
sulting solution.

3. A spinning liquor for artificial silk compris-
ing a solution of fibroin in an alkaline solution
of a metallic compound of the class consisting of
copper and nickel hydroxides with an alkyl ester
of the class consisting of methyl acetate, amyl
acetate, ethyl acetate and propyl acetate and
containing an added compound consisting of
glycol.

4. A spinning liquor for artificial silk compris-
ing a solution of fibroin in an alkaline solution
of a compound of at least one of the metals cop-
per and nickel mixed with an alkylester of the
class consisting of methyl acetate, amyl acetate,
ethyl acetate and propyl acetate, the solution also
containing an added organic compound compris-
ing an alcohol of the class consisting of glycerine
and glycol and tending to promote the viscosity
of the solution.

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