

UNITED STATES PATENT OFFICE.

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MESNE ASSIGNMENTS, TO SILAS W. PETTIT, OF PHILADELPHIA,
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MANUFACTURE OF FILAMENTS AND FILMS FROM VISCOSE.

No. 816,404.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed May 3, 1904. Serial No. 206,173.

To all whom it may concern:

Be it known that I, CHARLES N. WAITE, of
Lansdowne, in the county of Delaware and
State of Pennsylvania, have invented certain
5 new and useful Improvements in the Manu-
facture of Filaments and Films from Viscose,
whereof the following is a specification.

My invention is especially valuable in the
manufacture of the filaments commercially
10 known as "artificial silk," and I would refer
to Letters Patent of the United States No.
622,087, dated March 28, 1889, and No.
716,778, dated December 23, 1902, as con-
taining descriptions of typical and conven-
15 ient methods of obtaining such filaments.

In processes of the character contemplated
viscose (cellulose sulfo-carbonate) is forced
through spinnerets into a bath capable of
gelatinizing the viscose, whereby the fila-
20 ments thus produced are set in the form
given to them by the spinnerets. Hereto-
fore either an ammonium salt, such as am-
monium chlorid or ammonium sulfid or sul-
furic acid, has been employed as the efficient
25 agent of the setting-bath. I have found that
when either ammonium salt aforesaid is used
ammonium sulfid is liberated in large quanti-
ties and sulfur effloresces on the filaments,
impairing their luster and rendering their
30 color objectionable. I have also found that
if sulfuric acid is used hydrogen sulfid is lib-
erated, with the disadvantages which are due
to the presence of that poisonous gas, and sul-
fur is also deposited in the filaments, making
35 a second process necessary for its removal.

My invention is intended to avoid the ob-
jectionable features aforesaid, and to that end
I proceed as follows: I employ for the setting
solution a bath consisting of acid sodium sul-
40 fite, (NaHSO_3), into which the filaments or
films are projected, with the result that the
sodium hydrate in the viscose is neutralized
and the sulfur is converted into a material
soluble in water—viz., sodium hyposulfite.

45 For the purpose of dehydrating the fila-
ments and rendering them firmer and less
liable to abrasion during the subsequent fin-
ishing process than if treated solely with the
setting-bath of acid sodium sulfite afore-
50 said I find it advantageous to add a saline
solution to said bath. For instance, I make
a bath of saturated aqueous solution of acid

sodium sulfite containing from eleven and
one-half to twelve per cent. of available sul-
furous acid and to this add ten per cent. of 55
its weight of a saturated solution of ammo-
nium sulfate or sodium chlorid.

It is to be understood that after the fore-
going treatment the viscose films or filaments
may be subjected to any desired finishing 60
process.

Having thus described my invention, I
claim—

1. The hereinbefore-described improve-
ment in the manufacture of viscose products, 65
which consists in initially subjecting them
to the action of a solution comprising an acid
sulfite, substantially as set forth.

2. The hereinbefore-described improve-
ment in the manufacture of viscose products, 70
which consists in initially subjecting them to
the action of a solution comprising acid so-
dium sulfite, substantially as set forth.

3. The hereinbefore-described improve-
ment in the manufacture of viscose products, 75
which consists in initially subjecting them to
the action of a solution comprising an acid
sulfite and a dehydrating agent, substan-
tially as set forth.

4. The hereinbefore-described improve- 80
ment in the manufacture of viscose products,
which consists in initially subjecting them to
the action of a solution comprising acid so-
dium sulfite and a dehydrating agent, sub-
stantially as set forth. 85

5. The hereinbefore-described improve- 85
ment in the manufacture of viscose products,
which consists in initially subjecting them to
the action of a solution comprising an acid
sulfite and a saline dehydrating agent, sub- 90
stantially as set forth.

6. The hereinbefore-described improve-
ment in the manufacture of viscose products,
which consists in initially subjecting them to
the action of a setting solution comprising 95
acid sodium sulfite and ammonium sulfate,
substantially as set forth.

In testimony whereof I have hereunto
signed my name, at Philadelphia, Pennsyl-
vania, this 2d day of May, 1904.

CHARLES N. WAITE.

Witnesses:

ARTHUR E. PAIGE,
ANNA F. GETZFREAD.