

UNITED STATES PATENT OFFICE.

JOHN H. STEVENS, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE CELLULOID COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

WATERPROOF FABRIC.

SPECIFICATION forming part of Letters Patent No. 612,553, dated October 18, 1898.

Application filed April 15, 1898. Serial No. 677,675. (No specimens.)

To all whom it may concern:

Be it known that I, JOHN H. STEVENS, of the city of Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Waterproof Fabrics, of which the following is a specification.

Fabrics such as cloth, felt, and paper have been coated or saturated with pyroxylin solutions for the purpose of making them waterproof. Such solutions generally contain oils. The non-drying oils turn rancid in the course of time, which gives these fabrics a disagreeable odor and to a large extent affects the strength. The most prominent non-drying oil used for the purpose has been castor-oil. I have improved these waterproof fabrics by the introduction of certain new elements into the combinations, by means of which I secure a waterproof fabric in which the tendency of the oils to turn rancid is largely diminished. As a consequence my fabrics have a less disagreeable odor and are more durable. I accomplish this by combining my waterproofing solutions with compounds or salts containing what may be termed the "radical" C_6H_5O of phenol, (C_6H_5OH .)

I find that phenol itself (carbolic acid) possesses many objectionable properties as an ingredient in waterproofing solutions, but that salts of compound acids containing the phenöylic radical C_6H_5O or compounds of the phenöylic radical with bases can be used with success. These compounds of the phenöylic radical with bases are sometimes called "salts of carbolic acid."

The sulfocarbolates and carbolates are the best to use. I have met with success in using sulfocarbolate of soda, for instance, in my mixtures.

As an example of a waterproofing solution for use in making my compound fabric I would recommend the following: pyroxylin, one hundred parts; castor-oil, one hundred and fifty parts; camphor, one hundred and fifty parts; sulfocarbolate of soda, four parts, and wood-spirit sufficient to make a solution which can be spread. The nature of the peculiar decomposition to which these oils are subject and which results in rancidity has not been understood by chemists. It is not clearly known, for instance, that an antiseptic

substance would operate to retard such decomposition. I have discovered, however, that this is a fact and that the rancidity of castor-oil, for instance, is probably due to the same causes which generally operate to decompose organic matter.

While the term "antiseptic" is a somewhat general one, nevertheless it is perfectly understood by chemists and others, and the antiseptic properties of substances are also well known. Consequently the operator is already sufficiently informed as to the antiseptic value of the different compounds containing the phenöylic radical, and it is therefore unnecessary for me to give any further description in order to enable him to practically use this invention.

Above all, I would recommend the sulfocarbolate of soda; but there are other salts and compounds from which the operator may select. I prefer to select an antiseptic salt or compound which is soluble in the solvent employed—say in wood-spirit—although while this gives the best effects it is not absolutely necessary, because antiseptic salts or compounds can be thoroughly ground with the oil in a paint-mill or otherwise. The proportions also will vary according to the circumstances—such as the amount of oil, the expected conditions of rancidity, the strength of the antiseptic used, &c.; but in general the proportions will be, say, from two to five parts, by weight, of the antiseptic to each one hundred parts of pyroxylin.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A waterproof fabric coated or impregnated with a pyroxylin compound consisting in part of a non-drying oil and a salt or compound containing the phenöylic radical substantially as described.

2. A waterproof fabric coated or impregnated with a pyroxylin compound consisting in part of castor-oil and a salt or compound containing the phenöylic radical substantially as described.

JOHN H. STEVENS.

Witnesses:

ABRAHAM MANNERS,
JAMES W. SCOTT.