

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. 612,066, dated October 11, 1898.

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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 solution with salts or compounds containing halogen elements. The halogen elements are principally bromin, chlorin, and iodin. The compounds or salts referred to are represented by zinc chlorid, zinc chlorate, zinc iodid, bichlorid of mercury, potassium chlorate, &c.

I have met with considerable success in using the chlorid of zinc, for instance, in my mixtures. As an example of a waterproof 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; chlorid of zinc, three 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 clearly understood by chemists. It was 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 ran-

cidity 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 halogen elements, 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 chlorid of zinc; 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 can be varied according to the peculiar circumstances of each case, such as the amount of oil, the expected rancidity, and the strength of the antiseptic selected for use. The proportions generally will vary from one to five parts by weight of the antiseptic to each one hundred parts of pyroxylin. It is best to use the bichlorid of mercury in moderate proportions.

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 containing a non-drying oil and a salt containing a halogen element, substantially as described.

2. A waterproof fabric coated or impregnated with a pyroxylin compound containing castor-oil and a salt containing a halogen element, substantially as described.

JOHN H. STEVENS.

Witnesses:

ABRAHAM MANNERS,
JAMES W. SCOTT.