United States Patent Office.

WILLIAM A. TORREY, OF MOUNT CLAIR, NEW JERSEY.

Letters Patent No. 102,450, *dated April* 26, 1870.

IMPROVEMENT IN PREVENTING MILDEW AND DECAY IN SAILS, AWNINGS, TENTS, TARPAULINS, AND OTHER ARTICLES AND FABRICS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM A. TORREY, of Mount Clair, in the county of Essex and State of New Jersey, have invented a new and useful Process for Preventing Mildew and Decay in Sail-Cloths, Tarpaulins, Awnings, Tents, Hammocks, Coal-Bags, and other similar articles and fabrics made of cotton, flax, hemp, or equivalent fibrous material; and I hereby declare the following to be a full and exact description of the same.

There is a large class of articles, such as sails, awnings, tents, tarpaulins, coal-bags, hatch-covers, and the like, made of woven fibrous material, which are frequently injured or entirely destroyed by mildew, rot, or fermentation, from being exposed to water or moist air in the various situations in which they are employed.

The object of my invention is to preserve such articles by means of a cheap and easily-applied process.

To this end my invention consists in the application of carbolic acid, (phenol,) or the nearly-related compounds of cresol, rosol, &c., to such articles, so as to impregnate the fibers of which they are composed, and thereby entirely prevent mildew and decay.

The remarkable power of carbolic acid to prevent all fungous growths, such as mildew, and to preserve organic matters and prevent decay, is well known, but it was not known that it would adhere with sufficient tenacity to fibrous materials, when exposed to air, rain, and moisture, to preserve them.

By experiments I have established the fact that, after a slight impregnation of carbolic acid, sail-cloth, duck, canvas, gunny-cloth, osnaburg, and similar fabrics may be exposed to dampness, rain, and the various influences of the weather, such as required in the ordinary use of the articles enumerated, without injury from mildew or decay.

The following description will enable any one skilled in the art to which my invention relates to make and use the same.

A convenient mode of applying my invention is to dip the articles to be preserved in a solution of carbolic acid, in water or other solvent, made by dissolving one part of the acid in from seventy-five to one hundred and twenty-five parts of water or liquid, leaving the fabric in the solution for a sufficient time for the solution to fully enter the pores of the fibers.

The impregnation of the article with the liquid may be aided by exhaustion and pressure, as applied in dyeing and other processes, or by the aid of boiling and steaming in the ordinary way of saturating cloth with liquids.

After saturation, the article should be dried without exposure to a high degree of heat, such as would drive off the carbolic acid or injure the fabric.

Instead of using a solution in water or other liquid, to impregnate the fabric with the carbolic acid, the acid may be vaporized in a close vessel or chamber, and the fabric impregnated by exposure for a sufficient time to the fumes or vapors of the acid, either alone or mixed with steam.

Articles treated by my process may afterwards be painted, dyed, starched, varnished, or used without any other treatment; or the article may be first painted, dyed, starched, coated, or varnished, and afterward subjected to the treatment with carbolic acid; or the carbolic acid may be combined with dyes, paints, varnishes, or other coating, and in that form applied to the fabric or article to be preserved.

If, after long use, the preservative action of the process should be at all impaired, it may be repeated.

I am aware that tar-oil and similar tarry products from which carbolic acid may be obtained have been applied to some of the fabrics herein named, but they have proved almost useless in practice, owing to the presence of offensive and injurious substances, mixed with such as would alone be of value.

In order to more perfectly impregnate the fiber, carbolic acid may be reduced by and mixed with naphtha, alcohol, or other similar volatile fluids, since carbolic acid has a great affinity for them, and the article so treated will soon become dry by evaporation of the naphtha or other volatile fluids.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent of the United States, is—

1. The process herein described, for preventing mildew and decay in sail-cloth, awnings, and other articles and fabrics, such as hereinabove named, by impregnating such articles with carbolic acid or its related compounds, and then drying them as set forth.

2. The improved articles herein described, made by the process set forth.

WILLIAM A. TORREY.

Witnesses:

JUNIUS SCHENCK,

A. C. BENEDICT, Jr.