United States Patent Office.

R. O. LOWREY, OF SALEM, NEW YORK.

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IMPROVED MODE OF WATER-PROOFING PAPER, CLOTH, &c.

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, R. O. LOWREY, of Salem, in the county of Washington, and State of New York, have invented certain new and useful Improvements in Process for Making Paper, Cloth, and Similar Fabrics Water-Proof; and do hereby declare that the following is a full, clear, and exact description thereof.

To enable others skilled in the art to construct and use my invention, I will proceed to describe it.

My invention relates to processes for rendering paper and other fabrics water-proof, and consists in the application of soap, salt, and alum, or any suitable equivalents of the same, to the materials of which the fabrics are composed, while in the raw state, or to the fabrics or articles into which it is made, after being manufactured, or in treating the materials partially while in the raw state, and completing the treatment after they are manufactured.

In making water-proof paper, my process may be applied in part to the raw material before being made into paper, and in part or in whole to the paper after it is manufactured, and in the same way my process may be applied to all woven fabrics; but in rendering leather or similar articles water-proof, I apply my process after they are tanned.

My process consists in the application of two solutions, as hereinafter described. The first of these solutions is made by dissolving soap in water, reducing it to the consistency required for the special purpose for which it is to be used. The second solution is made by dissolving common salt and alum in water. The proportions of the salt and alum will depend upon the ingredients of which the soap is composed, that is, whether grease, resin, or gum is used, and the quantity and quality of each, and will also depend upon the color of the fabric to which it is to be applied, as well as the temperature at which the solution is used; as, for instance, I find that the strength and temperature of the solution affect dark colors more sensibly than they do light ones.

Instead of salt, (chloride of sodium,) other chlorides or substances having a saline quality may be used, and instead of alum, (sulphate of ammonia and sulphate of potassa,) other alums or sulphates or acetates may be used with similar results, varying more or less in their characteristics.

I prefer, however, to use the salt and alum with any soaps derived from fatty substances, resins, or gums, united with alkalies or sulphuric acid.

For some purposes, I find that better results are obtained by combining different kinds of soaps made from different greases, resins, or gums.

In making water-proof paper, I first either treat the pulp with the first solution before the paper is manufactured, and then treat the paper, after its manufacture, with the second solution, or the paper may be subjected to both solutions after it is manufactured. In the same way I treat all fabrics that are not woven, but formed up from a pasty mass.

All woven or textile fabrics may be treated with both solutions after being manufactured, or the raw materials of which they are composed, such as cotton, flax, hemp, silk, hair, wool, &c., may be subjected to both solutions before being woven or manufactured. In both cases, I first soak the material in the first solution, then remove, press, and dry them. When dry, I saturate with the second solution, and remove, press, and dry, as before.

I treat leather in like manner, first with my first solution, and then with my second solution.

In this way I am able to produce a completely water-proof paper, and to give to all woven articles or fabrics, as well as leather, a strong water-repellent quality.

Having thus described my invention, what I claim, is—

1. The process of making paper, cloth, and all similar fabrics, as well as leather, comparatively water-proof, as herein described.

2. The products resulting from the application of my process to pulp, paper, cloth, and similar fabrics, as well as leather, as herein described.

R. O. LOWREY.

Witnesses:

H. B. MUNN,

P. T. DODGE.