UNITED STATES PATENT OFFICE.

WARREN A. DURRIN, OF WOODVILLE, WISCONSIN.

PROCESS OF MAKING WATERPROOF AND AIR-TIGHT FABRICS.

SPECIFICATION forming part of Letters Patent No. 690,250, dated December 31, 1901.

Application filed April 3, 1901. Serial No. 54,205. (No specification.)

To all whom it may concern:

Be it known that I, WARREN A. DURRIN, a citizen of the United States, residing at Woodville, in the county of St. Croix and State of Wisconsin, have invented a new and useful Process of Making Waterproof and Air-Tight Fabrics, of which the following is a specification.

This invention relates to the art of making waterproof fabrics, and has for its object to provide a new and improved process of filling the fabric, so as to render the same waterproof and also air-tight and at the same time preserve the strength and flexibility of the fabric. It is furthermore designed to employ a filler made up of such elements as will not be injurious to articles of food wrapped or put up in the treated fabric and to reduce to the minimum the liability of the elements becoming separated from the fabric and mingling with the articles wrapped therein.

With these and other objects in view the present invention first consists in providing a filler having as its elements eighty per cent. of china or potters' clay to form a body, eight per cent. of rye-flour as a sizing, and twelve per cent. of wood-pulp as a bond to effectually unite the body and the sizing, to increase the strength and pliability of the filler, and to prevent the clay and sizing from cracking when the filler has become dried. These elements are thoroughly mixed and combined with water, so as to produce a paste-like filling compound of the consistency of paper-hangers' paste. The proportion of each ingredient has been given in its percentage of the volume of the entire filler.

The cotton, linen, burlap, or other fabric to be treated is taken in a continuous web and drawn through the filler compound contained in a vat, so as to effectually subject the opposite sides of the fabric to the paste, which is taken up thereby and enters the pores of the fabric, thereby effectually filling the latter. As the fabric passes from the bath of the filler compound it is passed between a pair of scrapers, which remove the superfluous filler from the opposite surfaces thereto, leaving only such of the filling material as has entered the pores and interstices of the fabric, after which the scraped fabric is carried through a drying-room or kiln to effectually dry the same and remove all water and dampness from the fabric and the filler contained therein. When the treated fabric has become thoroughly dried, it is then drawn through a bath of hot liquefied or melted paraffin-wax, which in its hot state will be taken up by the fabric and take the place of the water removed by the drying step of the process. After passing from the paraffin-bath and while yet hot the fabric is passed through a wringing-machine or mangle to remove the surplus wax.

It will be observed that the original fabric is unsized, whereby the filler may effectually enter all of the pores and interstices of the interior of the fabric, as well as upon the surface thereof, and the wax is finally applied as a waterproofing-surface.

The herein-described process of treating fabrics renders the same both waterproof and air-tight, whereby such treated fabrics are especially adapted for the manufacture of bags for containing food-stuffs—as, for instance, sugar, coffee, salt, dried fruits, &c. Moreover, being waterproof and air-tight the bags will prevent the contents thereof from drying and also retain the flavors and essential qualities thereof. The elements of the filler and the wax-bath are odorless, tasteless, and harmless should they become separated from the fabric and mingled with the contents of the bag.

What is claimed is—

The herein-described process of making waterproof fabrics, consisting in subjecting an unsized fabric to a bath of potters' clay, rye-flour and wood-pulp, then drying the filled fabric, and finally subjecting the same to a waterproof suracing of melted paraffin.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

W. A. DURRIN.

Witnesses:

J. C. JOHNSON,
A. HANSON.