

UNITED STATES PATENT OFFICE.

ADDISON E. HALEY, OF KENNEBUNK, MAINE, ADMINISTRATOR OF
THOMPSON HANNA, DECEASED.

PROCESS OF MANUFACTURING PARCHMENTIZED PAPER-BOARD.

SPECIFICATION forming part of Letters Patent No. 510,423, dated December 12, 1893.

Application filed April 8, 1893. Serial No. 469,609. (No specimens.)

To all whom it may concern:

Be it known that THOMPSON HANNA, deceased, late a resident of Kennebunk, in the county of York and State of Maine, did invent during his life-time a new and useful Improved Process of Manufacturing Parchmentized Paper-Board, of which the following is a specification.

This invention relates to the manufacture of that class of goods known to the trade as "leatheroid," "vulcanized fiber," and other coined names, which are made by treating cellulose (usually in the form of paper) with chloride of zinc, sulphuric acid or other parchmentizing agents, and in referring to any such products, herein, reference is had to all and in using the term "paper," cellulose is meant, whether in the form of paper or otherwise.

This invention consists in the process of manufacturing parchmentized paper board by passing paper successively through a plurality of baths of parchmentizing liquid of gradually diminishing strength, to one of which baths has been added nitrate of sodium or potash in about the proportions hereinafter described, then placing said paper in a bath of water to check the action of the chemicals, and then uniting a plurality of layers of said treated paper by pressure.

It is well known that when a sheet of paper is passed through the treating compound and the excess of compound is removed by rolls or scrapers, it is in a plastic or sticky state, and may be wound upon a roll or pressed into sheets composed of a plurality of layers of the single sheet and the same will adhere and form a practically homogeneous sheet, but if after passing through the bath of parchmentizing compound the sheet of paper is passed into water, the surface is so hardened that the layers will not unite. Hence in making parch-mentized boards as heretofore practiced the several layers comprising the board are united as they come from the bath of parchmentizing compound and completely saturated therewith, and are then soaked in water from twenty-four hours to several weeks, according to the thickness, to remove the chemicals. Mr. HANNA however discovered that, by treating the sheets of paper to successive baths of parchmentizing liquid of varying degrees of strength, in one or more of which nitrate of sodium or potash was combined with the parch-

mentizing compound the single sheet of paper may, after it has been treated, be passed through the water bath and then wound or pressed together in layers, and a good solid board be produced, which would be impossible by the use of the ordinary parchmentizing compound alone.

The method preferred is to add to the treating compound from one-half ounce to one ounce of the nitrate mentioned for each pound of acid the compound contains, and after the excess of the compound is removed by pressure in the usual way, wash out the remainder in any of the ordinary ways and then before the sheet is dried wind it on a drum or fold it on a plate, said drum or plate being preferably heated, or the sheets may be run through a bath of hot water before winding or folding, and then apply pressure, or apply pressure in the process of winding or after folding.

In carrying out this invention the paper is passed through a plurality of baths commencing with that of greatest strength and then through one or more of less strength.

A very great advantage is obtained by the employment of this process, particularly in the manufacture of thick boards because of the greater rapidity with which the work can be finished due to the shortening of the time that is required to soak out or neutralize the chemicals.

What is claimed is—

The process of manufacturing parch-mentized paper boards, by passing paper successively through a plurality of baths of parchmentizing liquid, of gradually decreasing strength, to one of which, at least, has been added nitrate of sodium or potash in about the proportions set forth, then placing said paper in a bath of water to remove the chemical, and then uniting a plurality of layers of said treated paper by pressure.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 28th day of March, A. D. 1893.

ADDISON E. HALEY,
As administrator of the estate of Thompson Hanna.

Witnesses:

GEORGE BONSER,
FRANK W. BONSER.