UNITED STATES PATENT OFFICE.

JAMES H. STEBBINS, JR., OF NEW YORK, AND PAUL CASAMAJOR, OF BROOKLYN, N. Y.

WATER AND ALKALI PROOF FABRIC.

SPECIFICATION forming part of Letters Patent No. 316,075, dated April 21, 1885.

Application filed November 7, 1884. (Specimens.)

To all whom it may concern:

Be it known that we, JAMES H. STEBBINS, Jr., a citizen of the United States, residing at New York, in the county and State of New York, and PAUL CASAMAJOR, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Water and Alkali Proof Fabric, of which the following is a specification.

The new material is produced by treating any fabric composed of vegetable woven fiber with certain chemical agents, as follows: The fabric is placed in a bath consisting of a mixture of eight parts of strong sulphuric acid and one part water, and exposed to its action for from five to ten seconds, according to the thickness or weight of the material being treated. It is then passed into a vat of water and thoroughly washed to remove as much of the free acid as possible. From this vat the fabric is passed into another containing water made slightly alkaline with ammonia, or with some other alkali, which neutralizes any free acid still contained in the fabric being treated, and finally the fabric is again washed in pure water and dried. The period of immersion in the acid bath may be somewhat increased, if desired, for convenience in manipulating the fabric, and in such case the proportion of water in the acid mixture should be correspondingly increased. Great care must, however, be taken not to carry this too far, for if the acid mixture is made too weak the fabric will be destroyed. We prefer to conduct the operation as above described, for by that method the best results may be obtained. The process is applicable to any woven fabric made from vegetable fiber—such as cotton or linen cloth—and renders the material not only impervious to water, but also proof against the action of alkalies. The fabric treated is considerably stiffened and its surface made very compact and quite smooth, and a considerable degree of polish may be given to it by proper pressing and finishing, if desired. The new material is useful for a great variety of purposes—as, for example, collars and cuffs, corsets, envelopes for documents, sample-packages, washers for steam-joints, and many other like uses. Its property of resisting the action of alkalies renders it very valuable in many chemical operations and other purposes where any ordinary fabric would be quickly destroyed—as, for example, the making of the trays used in the manufacture of bicarbonate of soda, also in dialysis, and it is also useful for covering the tops of bottles which contain chemicals, medicines, and the like to keep out moisture.

We do not limit ourselves to any particular use of the new material, as there are many other purposes to which it may be applied not mentioned herein.

We are aware that there is a material known as "parchment paper," which is prepared by processes analogous to the one herein described; but we make no claim to such material or the process of preparing it, and it differs, essentially, in its characteristics from our new fabric; but

What we do claim, and desire to secure by Letters Patent, is—

As a new article of manufacture, the water and alkali proof fabric prepared by treating a woven vegetable fabric with sulphuric acid and alkalies, substantially in the manner above set forth.

JAMES H. STEBBINS, JR.
PAUL CASAMAJOR.

Witnesses:
ALBERT P. DAWSON,
JOHN I. NORTHROP.