

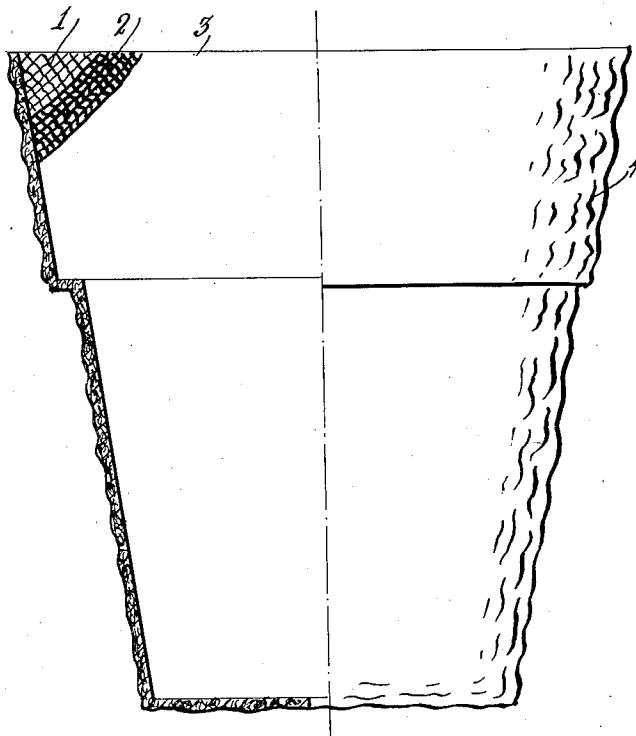
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POROUS FIBROUS MATERIAL

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UNITED STATES PATENT OFFICE

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POROUS FIBROUS MATERIAL

Application filed October 11, 1928. Serial No. 311,768.

This invention relates to porous fibrous material and is herein illustrated as applied to the production of a waterproof paper-fiber flower pot.

5 Such waterproofing has been effected by treatment with a solution of a suitable wax or resin in a volatile solvent. Under proper conditions the porosity of the article is not materially affected by this waterproofing, but
10 the fibers are so bound together that a stiffened article is produced. Moreover the fibers are waterproofed so that water is substantially without effect either upon them or upon the stiffness of the product. The article may be
15 made with either a rough or a wrinkled surface as described in said Krueger application.

According to the present invention the waterproofing is effected with acaroid resin or red gum, such as is described in my prior
20 Patent No. 1,597,168 dated August 24, 1926.

Other features and advantages will herein-after appear.

In the accompanying drawing is shown a flower pot molded from paper pulp. At 1
25 are diagrammatically shown uncoated fibers. Coated fibers 2, diagrammatically shown make up the body 3 of the flower pot. Wrinkles 4, cover the outer surface, giving it an attractive variegated appearance.

30 A five inch flower pot was molded out of wet paper pulp on the outside of a foraminous form to about four or five times the ultimate thickness desired. Then the pulp was compressed by added air pressure upon the
35 outside of the form and dried upon the form, with the result that its outer surface showed the rough surface of the accompanying drawing. The dried pulp form about as stiff as a
40 pulp pie plate of the same thickness was removed from the form and found to be porous.

The formed pot was then dipped into a solution of red gum in alcohol made by dissolving two pounds of the red gum in one gallon of denatured alcohol. The saturated
45 article was then drained, and dried. It was found to have substantially retained its original porosity, in fact, it was air-porous, but was stiff and resilient instead of being flexible. Moreover it had a pleasing red-brown
50 color.

It has been found that the various forms of red gum, known as yacca gum, grass tree gum, Botany Bay gum and black-boy gum, were all effective and all appeared superior to other resins, gums or waxes for the purpose
55 in hand.

It was found possible to use satisfactorily, a saturated solution of the gum. A mixture of alcohol and benzol made a very satisfactory solvent. A caustic soda solution may be used
60 for certain purposes. It alters the shape of the finished article and to some extent alters the fibers.

The process has been applied to other articles than flower pots. It has been used to produce a porous red-gum-bound paper-fiber
65 filtering element.

It has been found that the gum solution need not be applied by dipping. It may be sprayed or painted upon the article.
70

Having thus described certain embodiments of my invention what I claim is:

1. A porous fiber body consisting of fibers having air-porous interstices between them and bound together by red gum deposited
75 upon the fibers.

2. A stiff porous article consisting of paper fibers having air-porous interstices between them and bound together by red gum deposited
80 upon the fibers.

3. A stiff porous container consisting of paper fibers molded into an air-porous hollow form having interstices between the fibers and bound together by red gum deposited
85 upon the fibers.

4. A stiff porous flower pot consisting of paper fibers molded into an air porous hollow form having interstices between the fibers and bound together by red gum deposited upon
90 the fibers.

Signed at Broad St. Bank Bldg., Trenton, in the county of Mercer and State of New Jersey, this twenty-ninth day of September A. D. 1928.

DANIEL MANSON SUTHERLAND, Jr. 95