

UNITED STATES PATENT OFFICE

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PROCESS FOR TREATING COTTON AND OTHER VEGETABLE PULPS OR FIBERS OF A POROUS ABSORBING NATURE

No Drawing.

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This invention relates to a process of treating cotton and other vegetable pulps or fibers of a porous absorbing nature and is particularly adapted for treating vegetable matter.

5 An object of the invention is to provide a method of treating vegetable matter so that when said matter is used as a filtering or absorbing material it will remove tobacco oils from smoke passing therethrough.

10 Other objects of the invention are to provide a very simple process that requires the minimum of technical skill, that is very simple in its operation and comparatively inexpensive to carry out.

15 With the foregoing and other objects in view, the invention consists of a novel arrangement, combination and sequence of operation as will be specifically described and illustrated in the accompanying specification, 20 but it is to be understood that changes, variations and modifications may be resorted to without departing from the spirit of the claims hereto appended.

In the application of the present invention, the process is explained and described in connection with cotton inasmuch as cotton provides an ideal filtering medium for insertion in cigar, cigarette holders, and pipes, but it is within the contemplation of the present 30 invention to treat any fibers or pulp of vegetable matter in accordance with the present invention so as to increase the absorbing qualities for tobacco oils.

In carrying out the present invention, raw 35 cotton fiber is steamed in a large vat under approximately forty-two (42) pounds pressure. While the operation mentions steaming, it is to be understood that the inflowing heat comes from a mixture of steam and hot 40 air which has been found to give the best results.

After steaming the fibrous cotton, the mass is placed in a vat of desired dimensions in which a dilute solution of caustic soda of 45 about three and one-half percent strength is found. The cotton and dilute caustic soda solution are boiled for a suitable time in order to remove accumulated dirt. The caustic soda solution not only is a detergent, but 50 it has been found that the oils in the cotton

are removed by the boiling treatment with the weak caustic soda solution.

After a predetermined time, the caustic solution is drained out of the vat and the same is filled with clear water. The fiber and clear water mass are then boiled to remove 55 the caustic soda, the oils in the cotton and other impurities. Thereafter, the cotton fiber is thoroughly dried and combed if necessary to produce a fluffy fibrous mass. 60

The dry fibrous cotton is then sprayed with a boric acid solution so as to thoroughly saturate the fiber. Then when the cotton has been impregnated with boric acid solution the mass is treated with milk of magnesia solution which is preferably sprayed upon the 65 fibrous mass of the cotton.

The fibrous cotton thereafter may be dried under forced draft or under natural draft and is then ready to be used as a filtering 70 medium.

It is preferred to utilize the cotton treated in the above manner as a filtering medium either in cigar holders, cigarette holder, or in pipe stems. In the conventional way, the 75 filtering medium is disposed across the path of the smoke as it is drawn into the mouth of the user, whereupon tobacco oils are absorbed by the cotton processed in accordance with the present invention. 80

Tobacco oils are of a complex organic structure about which very little is known from a medical standpoint, but it is a fact that the oils collected in the filtering medium treated in accordance with the present invention 85 would be taken into the human system through the lungs. It is therefore believed that any solid material that would lodge in the lungs, if entirely eliminated from the tobacco smoke would be advantageous to the public health. 90

In some parts of the world, particularly in the Latin American countries, a sweet taste or flavor is desired in smoking tobacco. In 95 the latter event, the final step in processing the cotton would be to either spray or immerse the fibrous mass in a solution of sugar or the synthetic material, saccharine. By treating the cotton with sugar or saccharine, 100

the flavor of the smoke is considerably sweetened during its passage therethrough.

It is to be understood that by describing in detail herein, any particular form, arrangement or sequence of operation, it is not intended to limit the invention beyond the terms of the several claims, or the requirements of the prior art.

As an alternate or a collective treatment for producing a sweet taste or flavor, it has been found that if the fiber treated in accordance with the above process, be sprayed, dipped or otherwise impregnated with a very dilute solution of ethyl alcohol, a very pleasant taste is imparted to the smoke passing through the filtering or absorbing material.

The treated cotton may be impregnated with the alcohol after impregnation with the milk of magnesia and used as a filtering material. On the other hand, the saccharine or sugar treated cotton may be subjected to treatment with alcohol. In either event, it has been found that the treatment with alcohol has negligible effect upon prior steps in the process.

Furthermore, the cotton subjected to any of the above treatments, aside from adding a sweet flavor or taste, to tobacco smoke, will not alter the tobacco taste.

Having described my invention, what I claim is:

1. A method of treating vegetable matter to remove tobacco oils from smoke, comprising steaming the vegetable matter, subjecting the vegetable matter to immersion in hot caustic soda solution and thereafter boiling the mass in water, then drying the cotton and thereafter treating the vegetable matter successively with boric acid and milk of magnesia.

2. A method of treating vegetable matter to remove tobacco oils from smoke, comprising treating vegetable matter with a hot solution of caustic soda, removing the caustic soda, and boiling the vegetable matter in water and thereafter treating the vegetable matter with boric acid and milk of magnesia in separate operations.

3. A method of treating vegetable matter to remove tobacco oils from smoke, comprising treating vegetable matter with a hot solution of caustic soda, removing the caustic soda, and boiling the vegetable matter in water and thereafter treating the vegetable matter with boric acid and milk of magnesia in separate operations, and treating the resulting product with sugar.

4. A method of treating vegetable matter to remove tobacco oils from smoke, comprising treating vegetable matter with a hot solution of caustic soda, removing the caustic soda, and boiling the vegetable matter with boric acid and milk of magnesia in separate operations, and treating the resulting product with saccharin.

5. A method of treating vegetable matter to remove tobacco oils from smoke, comprising steaming the vegetable matter, subjecting the vegetable matter to immersion in hot caustic soda solution and thereafter boiling the mass in water, then drying the cotton and thereafter treating the vegetable matter successively with boric acid and milk of magnesia, and treating the resulting product with sugar.

6. A method of treating vegetable matter to remove tobacco oils from smoke, comprising steaming the vegetable matter, subjecting the vegetable matter to immersion in hot caustic soda solution and thereafter boiling the mass in water, then drying the cotton and thereafter treating the vegetable matter successively with boric acid and milk of magnesia, and treating the resulting product with saccharin.

7. A method of treating cotton fiber to remove tobacco oils from smoke, comprising steaming the vegetable matter, subjecting the cotton fiber to immersion in hot caustic soda solution, removing the caustic soda and boiling the fiber in water, then drying the fiber and treating the product in successive operations with boric acid and milk of magnesia.

8. A method of treating cotton fiber to remove tobacco oils from smoke, comprising steaming the vegetable matter; subjecting the cotton fiber to immersion in hot caustic soda solution, removing the caustic soda and boiling the fiber in water, then drying the fiber and treating the product in successive operations with boric acid and milk of magnesia, said caustic soda solution of approximately three and one-half per cent strength.

9. A method of treating cotton fiber to remove tobacco oils from smoke, comprising steaming the vegetable matter, subjecting the cotton fiber to immersion in hot caustic soda solution, removing the caustic soda and boiling the fiber in water, then drying the fiber and treating the product in successive operations with boric acid and milk of magnesia, and thereafter treating the resulting fiber with sugar.

10. A method of treating cotton fiber to remove tobacco oils from smoke, comprising steaming the vegetable matter, subjecting the cotton fiber to immersion in hot caustic soda solution, removing the caustic soda and boiling the fiber in water, then drying the fiber and treating the product in successive operations with boric acid and milk of magnesia, and thereafter treating the resulting fiber with saccharin.

In testimony whereof I affix my signature.
CLARENCE W. ANDREWS.