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S. VISNICK

2,804,874

FILTER TOBACCO PRODUCT

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FIG. 1

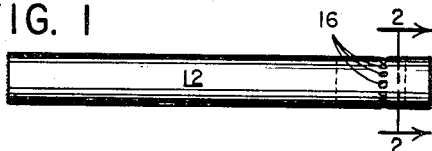


FIG. 2

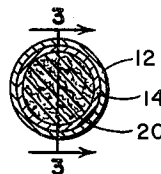


FIG. 3

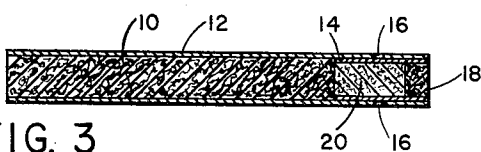


FIG. 4

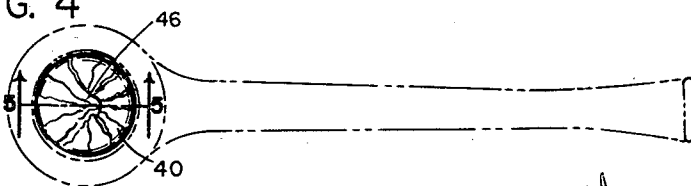


FIG. 5

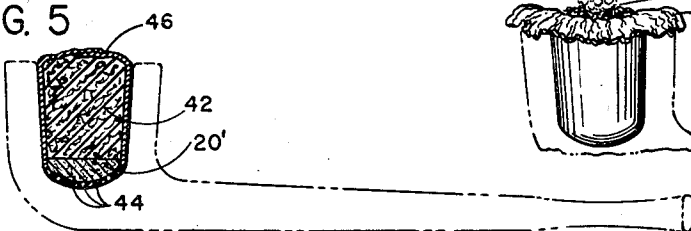
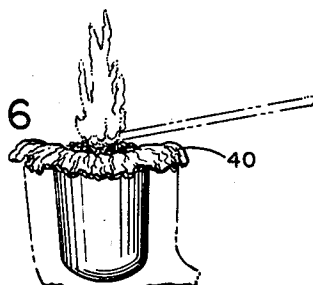


FIG. 6



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2,804,874

FILTER TOBACCO PRODUCT

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9 Claims. (Cl. 131—10)

This invention relates to purification of tobacco smoke. More particularly, it provides novel and cooperating filtering materials and condensation means for removing impurities from tobacco smoke.

One object of my invention is to provide a new material through which tobacco smoke from a pipe, cigar, or cigarette may be filtered which will remove a greater proportion of the harmful and irritating impurities than materials heretofore known, including especially a greater proportion of the methyl alcohol and carbon monoxide produced.

Another object is to provide such a material which permits easier drawing of smoke therethrough than filter materials heretofore known, so as not only to facilitate and increase the pleasure of smoking, but also by increasing the availability of air to cut down on the amount of carbonmonoxide actually formed in the first place.

Yet another object is to provide a filter material which, unlike celluloses, is free from traces of hydroxides which react with smoke ingredients to produce harmful formic acid.

A further object is to provide a material as described which is harmless if taken into the mouth or even if inhaled, being non-toxic and soluble in body fluids.

Yet another object is to provide such a material which does not adversely affect the taste of the smoke, so that enjoyment of the characteristic flavor thereof is not substantially impaired.

Another object is to provide such a material which provides a cooler smoke than other such materials known to me, the material having the property of picking up and holding an unusual amount of heat from the smoke passing therethrough.

Further objects are to provide such a material with ignition temperature high enough that it does not catch fire if the hot coal of burning tobacco contacts it, which can stand aging for substantial periods without deleterious effect, and which is inexpensive to manufacture.

Yet another object is to provide a filter material the absorbency of which is not impaired by higher temperatures, as is cellulose for example.

A further object is to still further increase filtering efficiency by providing a heat-exchanging metal foil jacket for use in conjunction with and surrounding the filter material in a pipe, cigarette, or cigar to increase the condensation of impurities, and to aid in giving a cooler smoke.

Still another object is to provide a novel arrangement of elements to facilitate the enjoyment of my novel filtering improvements in pipe-smoking, which has the additional advantage of providing pipe-loads in separate packages, which may be smoked without any additional provision in the pipe for filtering or condensation, and which makes for substantially complete freedom from unwanted condensation in the bowl or elsewhere in the pipe itself.

Other objects, advantages and features of my new invention will appear from the following description of cer-

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tain preferred embodiments, taken together with the attached drawings thereof, in which:

Fig. 1 is a side elevation of a cigarette embodying my invention;

Fig. 2 is a cross-sectional view of said cigarette, taken at line 2—2 of Fig. 1;

Fig. 3 is a cross-sectional view of said cigarette taken at line 3—3 of Fig. 2;

Fig. 4 is a plan view of a charge or pipe-load of tobacco embodying my invention, shown in relation to a pipe indicated by dotted lines;

Fig. 5 is a cross-sectional view of said pipe-load taken at line 5—5 of Fig. 4, similarly indicating a pipe in which said pipe-load is positioned; and

Fig. 6 is a side elevation of said pipe-load, showing the foil curled back to permit smoking, a pipe bowl and match being indicated in dotted lines.

Referring now to the drawings, there is shown in Figs. 1 through 3 a cigarette embodying my new invention.

The main body of the tobacco 10 is surrounded by the cigarette paper 12, which also encloses a heat-exchanging tube or cylinder 14 of aluminum foil. In the paper 12 are provided, to facilitate cooling through the metal foil, a multiplicity of holes 16, through which holes the material of the cylinder 14 is exposed.

Rearwardly of the cylinder 14 there is provided in the embodiment shown a short length of tobacco 18, so that no filter is apparent; however, between the tobacco 10 and the tobacco 18 there is enclosed within the cylinder 14 my new filtering material 20.

Broadly speaking, my filtering material is a baked, leavened wheat flour product, preferably containing the particular ingredients and prepared in the particular manner hereinafter described. A preferred material is baked from the following ingredients, in the amounts indicated:

Bleached white flour.....	lb.	3 1/2
Water.....	qt.	1
Cottonseed oil.....	oz.	2
Salt.....	oz.	1
Mineral oil.....	cc.	1
Calcium propionate.....	oz.	1/4
Yeast cakes.....		2

The above ingredients are mixed and prepared for baking in accordance with usual baking practice.

I prefer to expose the cottonseed oil before use to the sun or ultraviolet rays for three hours or so.

I include salt in order to improve the flavor effects of the final product and calcium propionate as a preservative.

Inclusion of mineral oil is not essential, but improves filtering quality and mechanical strength of the baked product.

After baking, I slice and cure the baked product in the hot sun, or under ultraviolet rays. It is usually adequate to produce a good taste to carry out such curing for three to six hours, depending on how hot the sun is at the time. I have found that this post-baking treatment is important in producing a product which when smoke is drawn through it will help in lending a good taste thereto and preserving the good taste thereof. This treatment also prevents bad taste effects which otherwise tend to result from contact of metal with the filter material, as in cutting out plugs thereof with dies, or crumbling the material.

After curing, I preferably granulate or crumb the product, and the crumbs of granulated material I use for filtering, as at 20 in the drawings.

I may use my baked leavened filter material without granulating, instead molding, cutting or stamping it to shape and using a unitary plug of the same. In this case I prefer to use in the mixture, introduced thereto before

baking, a small quantity of fibrous material, such as cotton, to add strength.

If immediately after smoking a cigarette the stub is taken apart and my new filter material exposed, it can be seen that the darkening in color undergone is greater than with other filters known to me. Furthermore, the filter material is hot to the touch, illustrating how much heat has been removed from the smoke; and weighing shows that the increase in weight is greater than that of other filters with which I am familiar.

My new filter material additionally has the other advantages which were listed above as objects of my invention.

The cylinder 14 of metal foil interacts with the filter material at 20, causing increased condensation and greatly increased filtering efficiency during contact with said filter material 20.

Tests made by placing thermocouples in the filter and at the tip of a cigarette according to my invention show that during smoking the filter is hotter than, and the smoke at the tip cooler than, in previous filter cigarettes with which I am familiar.

In Figs. 4, 5, and 6 I show an embodiment of my invention adapted for use in pipes. A wrapper 40, which may suitably be formed from a single piece of aluminum foil, encloses a charge of tobacco 42 resting on filtering material 20' according to my invention. Beneath said filtering material are a multiplicity of perforations 44 in the foil wrapper 40. The size of the unit is such that it may be slipped into the bowl of a pipe without removing the wrapper, pressed downwardly to conform its shape more precisely to that of the bowl in which it is pressed, and the foil wrapper 40, which is crimped at the top, at 46, to form a unit, is opened as shown in Fig. 6, to permit smoking. This pack has the advantage that it keeps the pipe clean, prevents formation of unpleasant condensation therein, and after smoking the wrapper may be folded together again for neat disposal. During smoking the filtering advantages characteristic of my filtering material 20' are obtained, and the foil of the wrapper 40 therearound aids in effectuating condensation and increasing filtering efficiency, in the manner already described.

I claim:

1. A filter cigarette having a filter positioned therein to require substantially all smoke that may be drawn from a lighted tip thereof to the opposite tip thereof to

pass therethrough, said filter containing material baked from leavened flour.

2. The cigarette of claim 1 in which said material is baked from a mixture including bleached wheat flour, yeast, and cottonseed oil.

3. The cigarette of claim 2 in which said material was exposed after baking to ultraviolet radiation.

4. The cigarette of claim 2 in which said cottonseed oil was subjected to substantial ultraviolet radiation prior to incorporation in said mixture.

5. The cigarette of claim 2 in which said mixture also includes mineral oil.

6. The cigarette of claim 2 in which said mixture also includes fibrous material to provide added strength.

7. A filter cigarette having a filter positioned therein to require substantially all smoke that may be drawn from a lighted tip thereof to the opposite tip thereof to pass therethrough, said filter constituting a baked product of leavened flour.

8. The cigarette of claim 2 in which a sleeve of metallic foil is disposed around said filter to increase condensation therein, and in which said sleeve is enclosed by a sheath provided with a multiplicity of perforations in the vicinity of said sleeve to expose said sleeve.

9. A smokable tobacco product comprising a tobacco roll, a wrapper therefor, and a filter positioned in said wrapper adjacent the end opposite from the end to be lit, said filter being dimensioned to require substantially all smoke to pass therethrough and comprising material baked from leavened flour.

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