

[54] RECONSTITUTED-TOBACCO SMOKING MATERIALS

2,809,904 10/1957 Kores..... 131/2
3,106,210 10/1963 Reynolds et al. 131/17

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[57] ABSTRACT

A smoking material comprises a tobacco component consisting of or comprising a combustible reconstituted tobacco, which smoking material contains a filler intimately incorporated therein and consisting solely or largely of zinc-oxide powder. Preferably the reconstituted tobacco consists solely or essentially of natural tobacco substances. The filler of zinc oxide is in powder form and of a particle less than 150 microns and constitutes between approximately 15-40 percent by weight of the tobacco composition. Adhesion of the components is effected by natural tobacco materials released in the slurring operation.

1 Claim, No Drawings

[56] References Cited

UNITED STATES PATENTS

3,720,214 3/1973 Norman et al. 131/17 R
3,292,636 12/1966 Mays..... 131/17

RECONSTITUTED-TOBACCO SMOKING MATERIALS

This invention concerns improvement relating to reconstituted-tobacco smoking materials.

According to the invention, a smoking material comprises a tobacco component consisting of or comprising a combustible reconstituted tobacco, which smoking material contains a filler intimately incorporated therein and consisting solely or largely of zinc-oxide powder. Preferably the reconstituted tobacco is of a type which consists solely or essentially of natural tobacco substances. Advantageously, the filler is added to the tobacco component before it is made into web, sheet or filaments and so that the filler becomes incorporated within the fibrous structure of the reconstituted tobacco. The proportion of filler included may be between 0.5 and 50 percent by weight of the smoking material and is preferably between 1.0 and 40 percent. The particle size of the zinc-oxide powder is preferably less than 150 microns.

Reconstituted tobaccos of the aforesaid type preferably to be used are characterized essentially by the absence of extraneous adhesives, binding being achieved by substances of, or released from, natural tobacco. Such reconstituted tobaccos are also to be distinguished from those in which the originating material is pulped chemically, using nitric acid or caustic soda for example.

Reconstituted tobacco may be made without non-tobacco adhesive by several known methods:

1. For example, as described in U.S. Patent Specification No. 3,043,723, reconstituted tobacco may be produced by disintegrating hot-water-extracted tobacco parts, mixing the extracted tobacco parts as binder with tobacco fines such as lamina or midribs, reducing the particle size of the mixture and casting a sheet on a solid band, for example of stainless steel, and evaporating the water.

In this case, zinc-oxide powder can be added together with the tobacco fines to the binder prepared from the water-extracted tobacco parts.

2. Filamentary reconstituted tobacco may be produced by extruding a mixture of water and tobacco parts comminuted to powder form, as described in United States Patent Specification 3,203,432.

The zinc-oxide powder can be added to the comminuted tobacco prior to the addition of the water and subsequent extrusion.

3. According to another method, reconstituted-tobacco sheet may be produced by laying a web of fibres, obtained by pulping tobacco material, on a Fourdrinier machine. The web may or may not be impregnated with concentrated aqueous tobacco extract.

The zinc-oxide powder can be added to the stock supplied to the machine.

The present invention can be applied with advantage to reconstituted tobacco of any of these kinds.

Results obtained by the analysis of smoke from cigarettes filled with reconstituted tobacco which was produced by Method (1) and contained various proportions by weight of zinc-oxide powder in the reconstituted tobacco sheet are tabulated below. The weight of the cigarettes tested was 1250 ± 50 mg.

ZnO in Sheet	Pressure Drop in Cigarette, mm Gauge	Total Particulate Matter in Smoke	
		Watering per cigarette	% Reduction
—	50-60	37.7	—
10	45-60	31.4	16.7
20	29-40	25.8	31.6
40	20-30	21.3	43.5

The reduction in total particulate matter is greater than would be expected from the dilution represented by the content of filler.

An example of the application of the invention to reconstituted tobacco produced by Method (3) will now be described:

Threshed stem from Burley tobacco was cooked three times in successive batches of 10 times its own weight of water at 90° - 95° C for 30 minutes each. The extracted stem was passed through a disc mill at 16.5 percent consistency, the clearance between plates being 0.035 ins. The consistency was then reduced to 2 percent and the material was beaten for 20 minutes in a conventional Valley beater. The resultant stock was diluted to 0.6 percent consistency and fed, together with finely divided zinc oxide (of a size less than 150 microns) to the headbox of a conventional Fourdrinier paper-making machine of the tissue-paper type. A continuous sheet with a final thickness of 0.13-0.23 mm and a base weight of 40-50g/m² was produced. Because of the low degree of retention of the zinc-oxide powder, in relation to the fibrous tobacco material on the Fourdrinier wire, two to three times the quantity of zinc oxide required in the final sheet should be added to the head-box of the machine. The sheet produced was cut at 56 cuts per inch and made into cigarettes. The cigarettes were smoked on a conventional machine at 1 puff per minute of 35 ml volume and 2 seconds duration and the smoke was collected on a Cambridge Filter. The filter was extracted with methanol and the extract, after filtration, was evaporated off on a water bath. The remaining tar was baked for 16 hours at 100° C. Analysis gave the following results:

% ZnO in Sheet	Cigarette Weight in mg	Pressure Drop in Cigarette, mm Water Gauge	Baked Tar in mg per cigarette	Smoke: % Reduction
NIL	720 \pm 20	36 \pm 4%	12.0	—
3.9	690 \pm 20	37 \pm 4%	5.6	53.3
10.8	770 \pm 20	37 \pm 4%	4.3	64.2

The results show that the reduction in baked tar was considerably greater than would be expected from the dilution represented by the content of filler.

The smoke from cigarettes produced as described above was found to be agreeable.

We claim:

1. The method of reducing the T.P.M. from tobacco smoke to an extent greater than that expected from a tobacco dilution by a non-combustible filler means of equal mass comprising intimately incorporating in a tobacco slurry finely divided ZnO powder of a particle size less than 150 microns, said ZnO constituting approximately 15-40 percent by weight of the tobacco to achieve a tar reduction in an amount up to 64 percent and sheeting the ZnO containing tobacco slurry, the binding being achieved substantially only by substances released from the natural tobacco in slurring the said tobacco.

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