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TOBACCO SMOKING PRODUCT

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This invention relates to tobacco smoking products and more particularly to a tobacco mixture or product which will burn at a predetermined relatively low temperature to prevent the release of high temperature volatiles and which are known to be injurious to the smoker.

Attempts have been made heretofore to separate unwanted constituents, e.g. nicotine, and high temperature volatilizing compounds which are believed to be cancerigenic in character. A variety of filters have been proposed and used for effecting the separation of such injurious constituents from tobacco smoke with various degrees of success. It is now believed that the most injurious constitutents of tobacco smoke comprise volatile high boiling hydrocarbons and tars such as are present in the smoke from tobacco products which have been subjected to a burning temperature of above about 800° F.

The present invention provides a tobacco mix or blend which burns at a temperature below 800° F. and preferably down to about 500° F.

It is, therefore, an object of the invention to provide a burning tobacco mixture which comprises tobacco and a chemical compound distributed throughout the mass which when the tobacco mixture is burned, as in cigarettes, pipes and the like, the temperature of burning is caused to be reduced to below that at which these injurious compounds are volatilized and released into the smoke.

Another object of the invention is to provide a smoking tobacco which is useful as a tobacco mix for cigarettes, and pipes, and which has a low burning temperature and does not affect the flavor and aroma of the tobacco.

These and other objects and advantages of the invention will become apparent from the following description.

Briefly, the invention may be practiced as follows: Leaf tobacco that has been treated in the usual way, for example, by drying, curing, sweating, fermenting, aging, and then comminuted to particles passing through a 20-mesh screen, and with a substantial portion of which are of a size to pass through a 40-mesh screen, is admixed with a substance decomposing to release carbon dioxide or water vapor at a temperature between about 500° F. and 800° F. and thus control the temperature of burning of the tobacco.

The amount of the temperature control substance admixed with the tobacco to produce the desired results varies depending upon the particular substance used and its decomposition temperature. In general, the temperature control substance added constitutes about 2 to 8% by weight of the tobacco mixture. The amount of the adjuvant substance being small and uniformly distributed throughout the mass of tobacco does not alter the taste and aroma of the tobacco.

The following examples are illustrative of the specific embodiments of the invention, it being understood that the examples are not intended to be limitative except as set forth in the claims appended hereto.

The parts given in the examples are by weight unless otherwise stated.

Example I

To a blend of 40 parts of Wisconsin tobacco, 44 parts of Pennsylvania tobacco and 16 parts of Havana tobacco comminuted to a particle size of 20 to 40 mesh is added 5 parts of sodium bicarbonate, the latter being thoroughly distributed throughout the tobacco particles by a mechanical mixer. Thereafter the tobacco carbonate mixture is made into a cigarette in the usual manner. The temperature of the burning cigarette is reduced from approximately 900° F. to 525° F. by the cooling produced by the evolution of carbon dioxide at temperatures above 520° F.

Example II

To a blend of 80% Pennsylvania leaf tobacco and 20% Havana tobacco communited to a particle size of 20 to 40 mesh is thoroughly mixed 8% by weight of potassium ruthenate. The temperature of the burning tobacco mixture is reduced from approximately 950° F. to about 700° F. by the potassium salt which decomposes evolving water vapor at 400° F.

Example III

A tobacco blend as in Example I is made up and 6% by weight of potassium bicarbonate admixed therewith and thoroughly and uniformly distributed throughout the mass of tobacco fines, to provide a tobacco mass which burns at a temperature of about 600° F.

Additional adjuvants such as glycerine, glycol or the like may be included along with the temperature lowering substance where desired. Also flavoring additives and the like substances may be present.

The essential feature of the invention is the incorporation of a non-toxic substance in the tobacco mixture which decomposes during burning of the tobacco to release water vapor or harmless cooling gas to keep the burning temperature as low as possible and particularly below 800° F. The temperature lowering material must release a non-toxic cooling substance during burning of the tobacco mass, e.g. in a cigarette or pipe mixture to thus avoid volatilization and releasing of harmful constituents into the tobacco smoke.

What is claimed is:

1. Smoking tobacco containing approximately 6% by weight of alkali metal bicarbonate.

2. Smoking tobacco containing approximately 6% by weight of potassium bicarbonate.

3. A smoking tobacco mixture comprising a blend of tobacco particles admixed with 5 to 8% by weight of alkali metal bicarbonate.

4. A smoking tobacco mixture comprising a blend of tobaccos comminuted to a particle size of 20 to 40 mesh, and to which is incorporated approximately 5 to 8% of an alkali metal compound selected from the group consisting of sodium bicarbonate, potassium bicarbonate, and potassium ruthenate.

5. A smoking tobacco mixture for cigarettes, pipes, and the like, which comprises tobacco particles containing volatilizable compounds which are injurious, said tobacco mixture containing a burning temperature control substance which maintains the burning temperature of the mixture below the temperature at which injurious compounds present are volatilized and released into the smoke, said temperature control substance comprising an alkali metal bicarbonate adapted to thermally decompose and thereby release carbon dioxide during the burning of said tobacco mixture.

6. A cigarette having in combination, a tobacco filler, a cigarette wrapper disposed directly about and in contact with said tobacco filler, said tobacco filler com-

prising tobacco leaf particles and sodium bicarbonate adapted to thermally decompose and thereby release carbon dioxide during the burning of said tobacco filler whereby the temperature of the burning cigarette is maintained low and below the volatilization temperature of injurious hydrocarbon compounds ordinarily present in burning tobacco smoke.

7. A cigarette having in combination, a tobacco filler, a cigarette wrapper disposed directly about and in contact with said tobacco filler, said tobacco filler comprising tobacco leaf particles and a non-toxic alkali metal bicarbonate adapted to thermally decompose and thereby release carbon dioxide during the burning of said tobacco filler whereby the temperature of the burning cigarette is maintained low and below the volatilization temperature of injurious hydrocarbon compounds ordinarily present in burning tobacco smoke, said adjuvant comprising an alkali metal salt uniformly distributed throughout the tobacco filler.

References Cited in the file of this patent

UNITED STATES PATENTS

467,055	Schnieder	Jan. 12, 1892
675,185	Arnold	May 28, 1901
1,462,480	Bosse	July 24, 1923
1,972,718	Sharlit	Sept. 4, 1934
2,029,494	Lowenthal	Feb. 4, 1936
2,114,281	Allen	Apr. 19, 1938
2,586,701	Norton	Feb. 19, 1952

FOREIGN PATENTS

869,465	Germany	Nov. 12, 1953

OTHER REFERENCES

Time Magazine, April 22, 1957, issue, page 50.

British Medical Journal, Jan. 5, 1957, issue, pages 1–3.