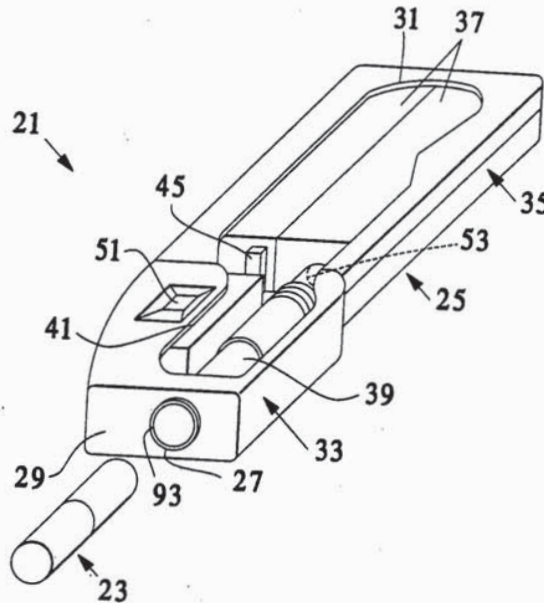




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(54) Title: ELECTRICAL SMOKING SYSTEM FOR DELIVERING FLAVORS AND METHOD FOR MAKING SAME



(57) Abstract

A smoking system (21) is provided in which a replaceable cigarette (23) containing tobacco flavor material is electrically heated by a set of electrical heater elements contained within a lighter (25) to evolve tobacco flavors or other components in vapor or aerosol form for delivery to a smoker. The cigarette (23) and lighter (25) are adapted to provide air flow patterns through the smoking system such that air flows transversely into the cigarette (23). Such patterns improve aerosol and flavor delivery to the smoker and reduce the condensation of residual heater-region vapor/aerosol in the smoking system.

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**ELECTRICAL SMOKING SYSTEM FOR DELIVERING
FLAVORS AND METHOD FOR MAKING SAME**

Cross-Reference to Related Applications

This application is a continuation-in-part of copending, commonly-assigned United States Patent Application Serial No. 07/666,926, filed March 11, 1991, now
5 abandoned in favor of file-wrapper continuation application Serial No. 08/012,799, filed February 2, 1993, which is hereby incorporated in its entirety.

Background of the Invention

This invention relates to smoking systems in which
10 cigarettes are used with lighters, and methods for making the same.

An electrical smoking article is described in commonly-assigned United States Patent No. 5,060,671, which is hereby incorporated by reference in its entirety. That
15 patent describes a smoking article which is provided with a disposable set of electrical heating elements. A charge of tobacco flavor medium containing, for example, tobacco or tobacco-derived material is deposited on each of the heating elements. The disposable heater/flavor unit is mated to a
20 source of electrical energy such as a battery or capacitor, as well as to control circuitry to actuate the heating elements in response to a puff by a smoker on the article or in response to the depression of a manual switch. The circuitry is designed so that at least one, but less than
25 all of the heating elements are actuated for any one puff, and so that a predetermined number of puffs, each containing a pre-measured amount of tobacco flavor substance, e.g., an aerosol containing tobacco flavors or a flavored tobacco response, is delivered to the smoker. The circuitry also
30 preferably prevents the actuation of any particular heater more than once, to prevent overheating of the tobacco flavor medium thereon.

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With such articles, the heater is thrown away with the spent remainder of tobacco material. Also, the electrical connections between the heaters and the battery must be able to endure repeated release and reconnection as
5 flavor units are replaced.

In copending, commonly-assigned United States Patent Application Serial No. 07/666,926, filed March 11, 1991, now abandoned in favor of Continuing Application Serial No. 08/012,799, filed February 2, 1993, an electrical
10 smoking article is disclosed that has reusable heating elements and a disposable portion for tobacco flavor generation. The disposable portion preferably includes a flavor segment and a filter segment, attached by a tipping paper or other fastening arrangement. Certain operational
15 difficulties are, however, associated with reusable heating elements, particularly in that residual aerosol tends to settle and condense on the heating elements and other permanent structural components of the article.

In light of the above, it is therefore desirable
20 to be able to provide an improved smoking system in which the heating elements of the lighter are reusable.

It is also desirable to be able to provide such a system in which condensation of aerosol onto the heating elements and other structural components of the lighter is
25 minimized.

It is further desirable to provide a smoking article which is easier to manufacture.

It is still further desirable to provide a smoking article which provides improved flavor delivery to the
30 smoker.

Summary of the Invention

Accordingly, a primary object of the present invention is to provide a novel smoking system which provides advantages over prior systems.

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Another object of the present invention is to provide improved flavor delivery from a smoking system in which cigarettes are used with lighters.

It is also an object of this invention to provide
5 a smoking system in which the heating elements of a lighter are reusable, and of which the volume of disposable portions is minimized.

It is also an object of this invention to provide a system in which condensation of aerosol onto heating
10 elements and other structural components of a lighter is minimized.

It is a further object of this invention to provide a smoking article and manufacturing processes for making the same that are easier and cost effective, even at
15 state-of-the-art mass production speeds.

It is a still further object of this invention to provide improved aerosol and flavor delivery to the smoker.

In accordance with one aspect of the present invention, a cigarette for use in a smoking system for
20 delivering a flavored tobacco response to a smoker, the system including heating means, is provided. The cigarette includes a carrier having first and second ends spaced apart in a longitudinal direction and having first and second surfaces. The first surface defines a cavity between the
25 first and second ends, and the second surface includes an area for being disposed adjacent heating means. Tobacco flavor material is disposed on the first surface of the carrier. The tobacco flavor material generates the flavored tobacco response in the cavity for delivery to a smoker when
30 the tobacco flavor material is heated by the heating means. The carrier and the tobacco flavor material allow transverse air flow into the cavity.

In accordance with another aspect of the present invention, a lighter for use in combination with a removable
35 cigarette in a smoking system that delivers a flavored tobacco response to a smoker is provided. The lighter includes a heater fixture for receiving, through a first

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