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United States Patent [19]
Counts et al.

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[45] **Date of Patent:** **May 12, 1998**

[54] **ELECTRICAL HEATER OF AN ELECTRICAL SMOKING SYSTEM**

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[73] **Assignee:** **Philip Morris Incorporated**, New York, N.Y.

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[21] **Appl. No.:** **790,179**

U.S. application No. 07/443.636, Nov. 29, 1989.

[22] **Filed:** **Jan. 29, 1997**

Related U.S. Application Data

[60] Continuation of Ser. No. 451,081, May 25, 1995, abandoned, which is a division of Ser. No. 380,718, Jan. 30, 1995, Pat. No. 5,666,978, which is a continuation of Ser. No. 118,665, Sep. 10, 1993, Pat. No. 5,388,594, which is a continuation-in-part of Ser. No. 943,504, Sep. 11, 1992, Pat. No. 5,505,214, which is a continuation-in-part of Ser. No. 666,926, Mar. 11, 1991, abandoned.

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[51] **Int. Cl.⁶** **H05B 3/58**

[52] **U.S. Cl.** **219/535; 338/294; 131/194**

[58] **Field of Search** 219/535, 538, 219/539, 542, 544, 552, 553; 338/283, 117, 294, 310; 131/194; 392/386, 390

[57] **ABSTRACT**

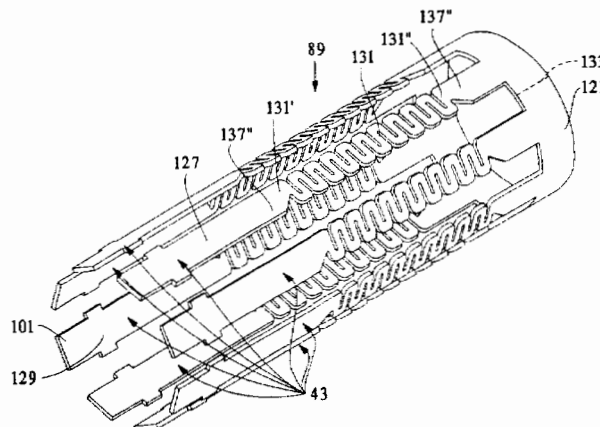
A smoking system is provided in which a replaceable cigarette containing tobacco flavor material is electrically heated by a set of electrical heater elements contained within a lighter to evolve tobacco flavors or other components in vapor or aerosol form for delivery to a smoker. The cigarette and lighter are adapted to provide air flow patterns through the smoking system such that air flows transversely into the cigarette. 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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20 Claims, 15 Drawing Sheets



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Fig. 1

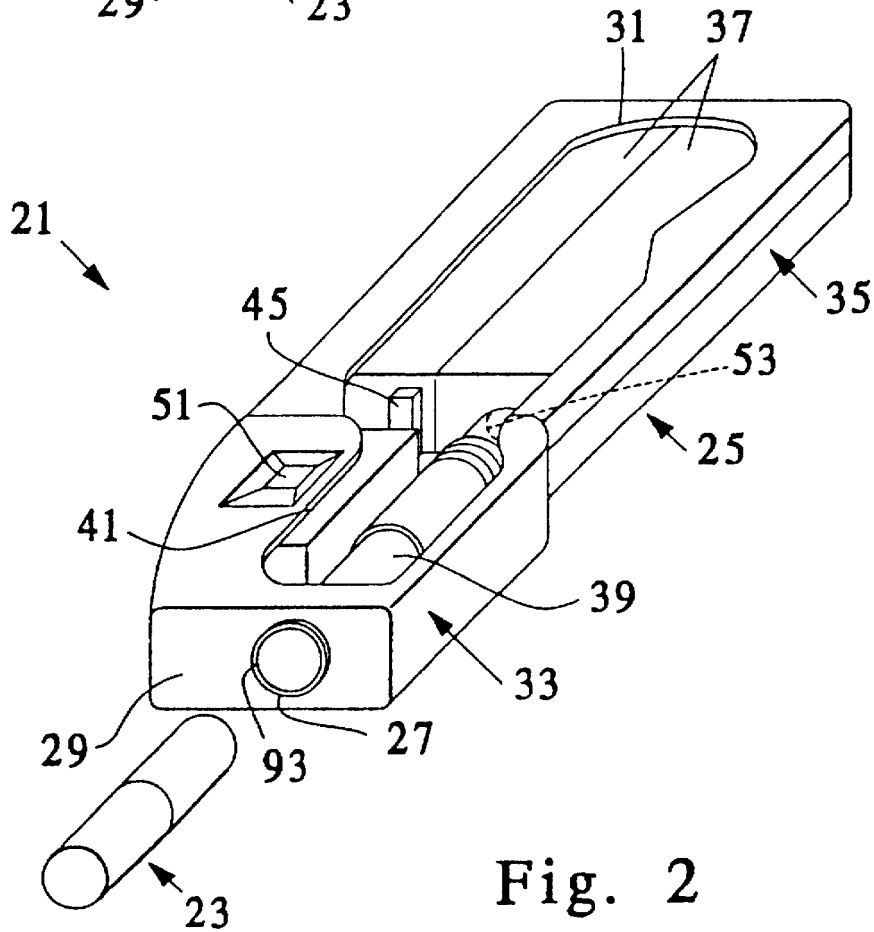
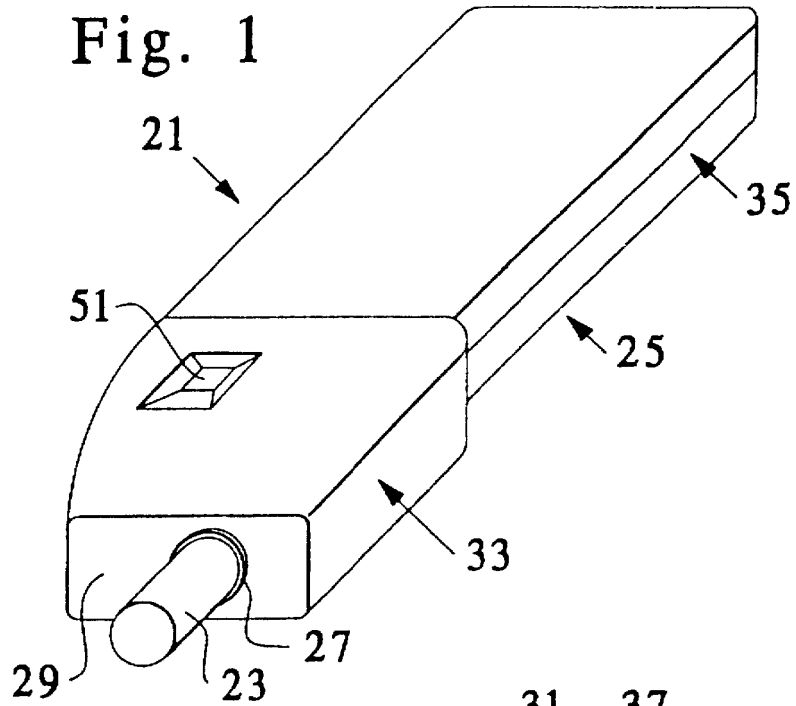


Fig. 2

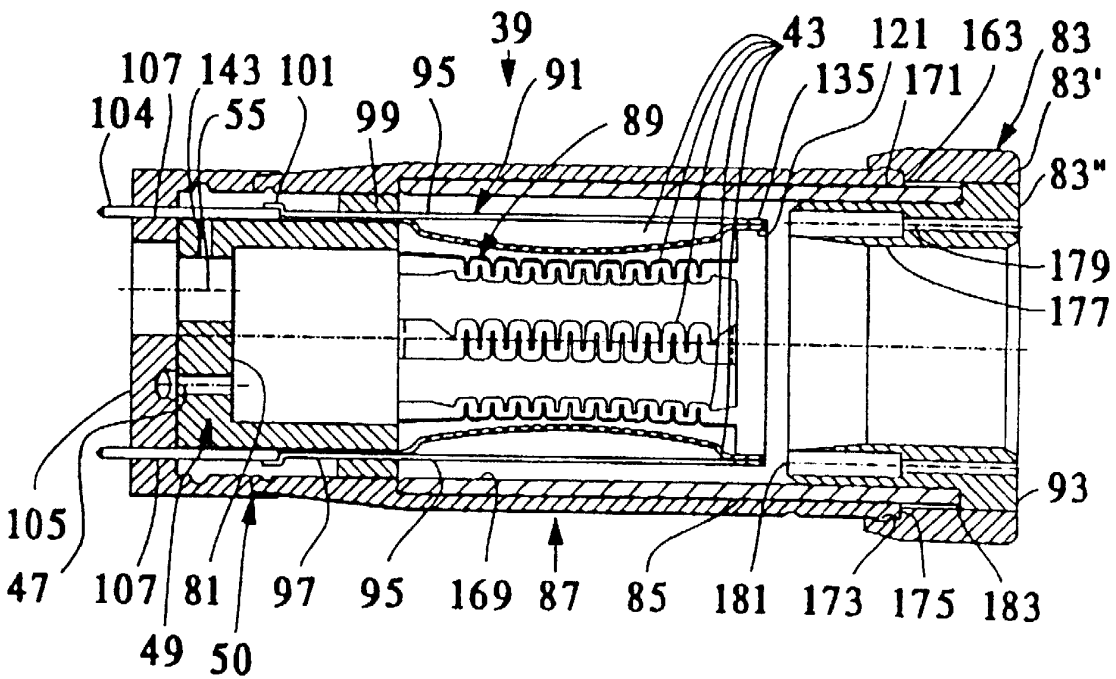


Fig.3A

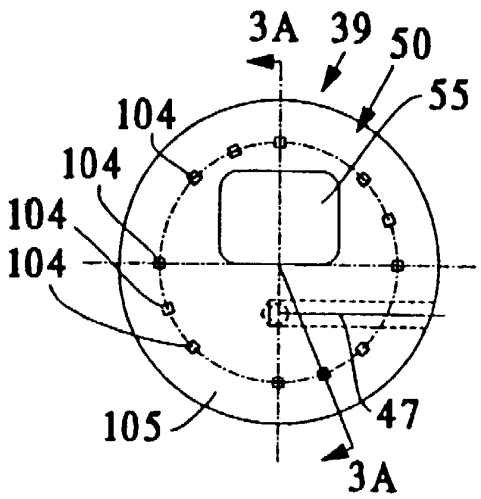


Fig.3B

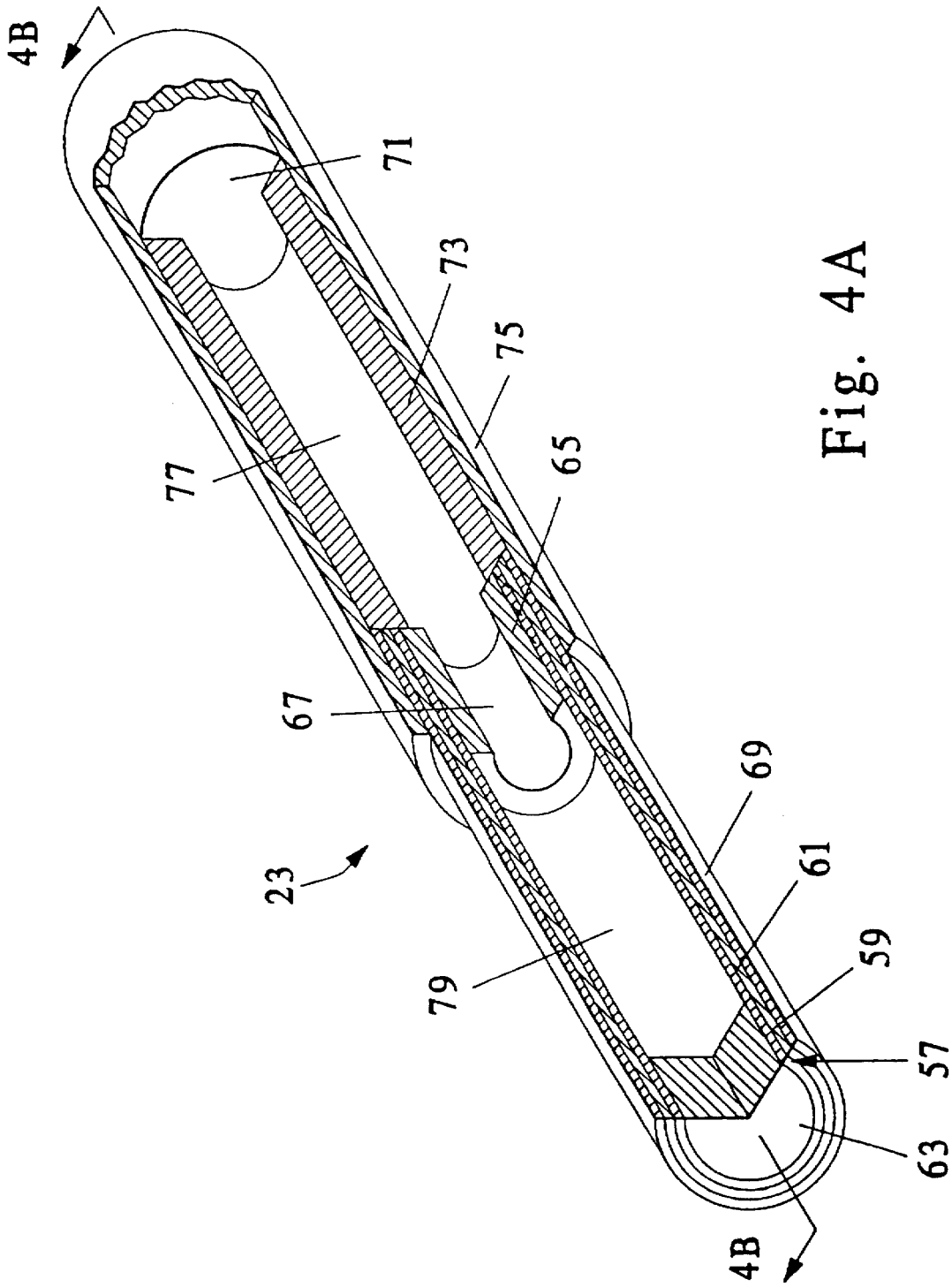


Fig. 4A

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