

[54] **ELECTRICAL SMOKING**  
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 [73] **Assignee:** **Philip Morris Incorporated**, New  
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4,393,884	7/1983	Jacobs	131/273
4,431,903	2/1984	Riccio	219/238
4,436,100	3/1984	Green, Jr.	131/330
4,463,247	7/1984	Lawrence et al.	219/236
4,562,337	12/1985	Lawrence	219/421
4,570,646	2/1986	Herron	131/185
4,580,583	4/1986	Green, Jr.	131/330

(List continued on next page.)

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**FOREIGN PATENT DOCUMENTS**

**Related U.S. Application Data**

[63] Continuation of Ser. No. 666,926, Mar. 11, 1991, abandoned.

[51] **Int. Cl.<sup>5</sup>** ..... **A24F 1/00**  
 [52] **U.S. Cl.** ..... **131/194; 131/270;**  
 131/273; 128/200.14; 128/202.21; 128/203.27  
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1202378	1/1988	Canada	.
87/104459	2/1988	China	.
0295122	12/1988	European Pat. Off.	.
0358002	3/1990	European Pat. Off.	.
0358114	3/1990	European Pat. Off.	.
0430566	6/1991	European Pat. Off.	.
0438862	7/1991	European Pat. Off.	.
3640917A1	8/1988	Fed. Rep. of Germany	.
3735704A1	5/1989	Fed. Rep. of Germany	.
61-68061	4/1986	Japan	.
WO86/02528	4/1986	PCT Int'l Appl.	.
2132539	6/1984	United Kingdom	.
2148079	5/1985	United Kingdom	.
2148676	5/1985	United Kingdom	.

[56] **References Cited**

**U.S. PATENT DOCUMENTS**

1,771,366	7/1930	Wyss et al.	.
1,968,509	7/1934	Tiffany	219/38
2,057,353	10/1936	Whittemore, Jr.	219/38
2,104,266	1/1938	McCormick	131/12
2,442,004	5/1948	Hayward-Butt	128/200
2,974,669	3/1961	Ellis	131/172
3,200,819	8/1965	Gilbert	128/208
3,363,633	1/1968	Weber	131/178
3,402,723	9/1968	Hu	131/185
3,482,580	12/1969	Hollabaugh	131/178
3,804,100	4/1974	Fariello	131/173
3,889,690	6/1975	Guarnieri	131/185
4,016,061	4/1977	Wasa et al.	204/192 F
4,068,672	1/1978	Guerra	131/170 A
4,077,784	3/1978	Vayrynen	55/146
4,131,119	12/1978	Blasutti	131/187
4,141,369	2/1979	Burruss	131/171 A
4,164,230	8/1979	Pearlman	131/171 R
4,193,411	3/1980	Faris et al.	131/171 R
4,215,708	8/1980	Bron	131/262 B
4,219,032	8/1980	Tabatznik et al.	131/170 A
4,246,913	1/1981	Ogden et al.	131/171 A
4,256,945	3/1981	Carter et al.	219/10.75
4,259,970	4/1981	Green, Jr.	31/330
4,303,083	12/1981	Burruss, Jr.	131/271

**OTHER PUBLICATIONS**

Excerpt from "NASA Tech Briefs," Jul./Aug. 1988, p. 31.

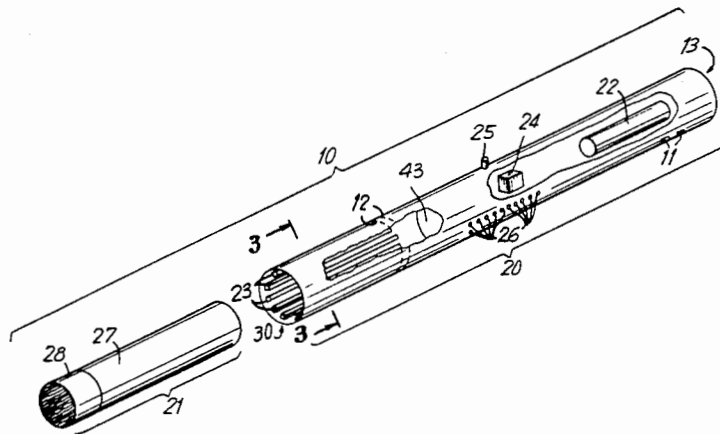
"PTC Thermistors," Keystone Carbon Company product literature.

*Primary Examiner*—V. Millin  
*Assistant Examiner*—Jennifer Doyle  
*Attorney, Agent, or Firm*—Jeffrey H. Ingerman

[57] **ABSTRACT**

An article is provided in which a replaceable tobacco flavor medium is electrically heated by a set of permanent reusable heaters to evolve inhalable flavors or other components in vapor or aerosol form. Each heater heats only a portion of the available tobacco flavor medium so that a plurality of individual puffs of tobacco flavor substance can be delivered sequentially to the smoker. The tobacco flavor medium preferably contains tobacco materials.

**37 Claims, 4 Drawing Sheets**



## U.S. PATENT DOCUMENTS

4,621,649	11/1986	Osterrath .....	131/185	4,874,924	10/1989	Yamamoto et al. ....	219/274
4,623,401	11/1986	Derbyshire et al. ....	148/13	4,877,989	10/1989	Drews et al. ....	310/323
4,637,407	1/1987	Bonanno et al. ....	131/175	4,922,901	5/1990	Brooks et al. ....	128/203.26
4,659,912	4/1987	Derbyshire .....	219/535	4,937,421	6/1989	Luthy .....	219/272
4,735,217	5/1988	Gerth et al. ....	131/273	4,945,931	8/1990	Gori .....	131/355
4,771,796	9/1988	Myer .....	131/273	4,947,874	8/1990	Brooks et al. ....	131/329
4,776,353	10/1988	Lilja et al. ....	131/297	4,947,875	8/1990	Brooks et al. ....	131/330
4,846,199	7/1989	Rose .....	131/329	4,966,171	10/1990	Serrano et al. ....	131/194
4,848,376	7/1989	Lilja et al. ....	131/352	4,981,522	1/1991	Nichols et al. ....	131/274
				4,991,606	2/1991	Serrano et al. ....	131/359
				5,095,921	3/1992	Losee et al. ....	131/194
				5,144,962	9/1992	Count et al. ....	131/194

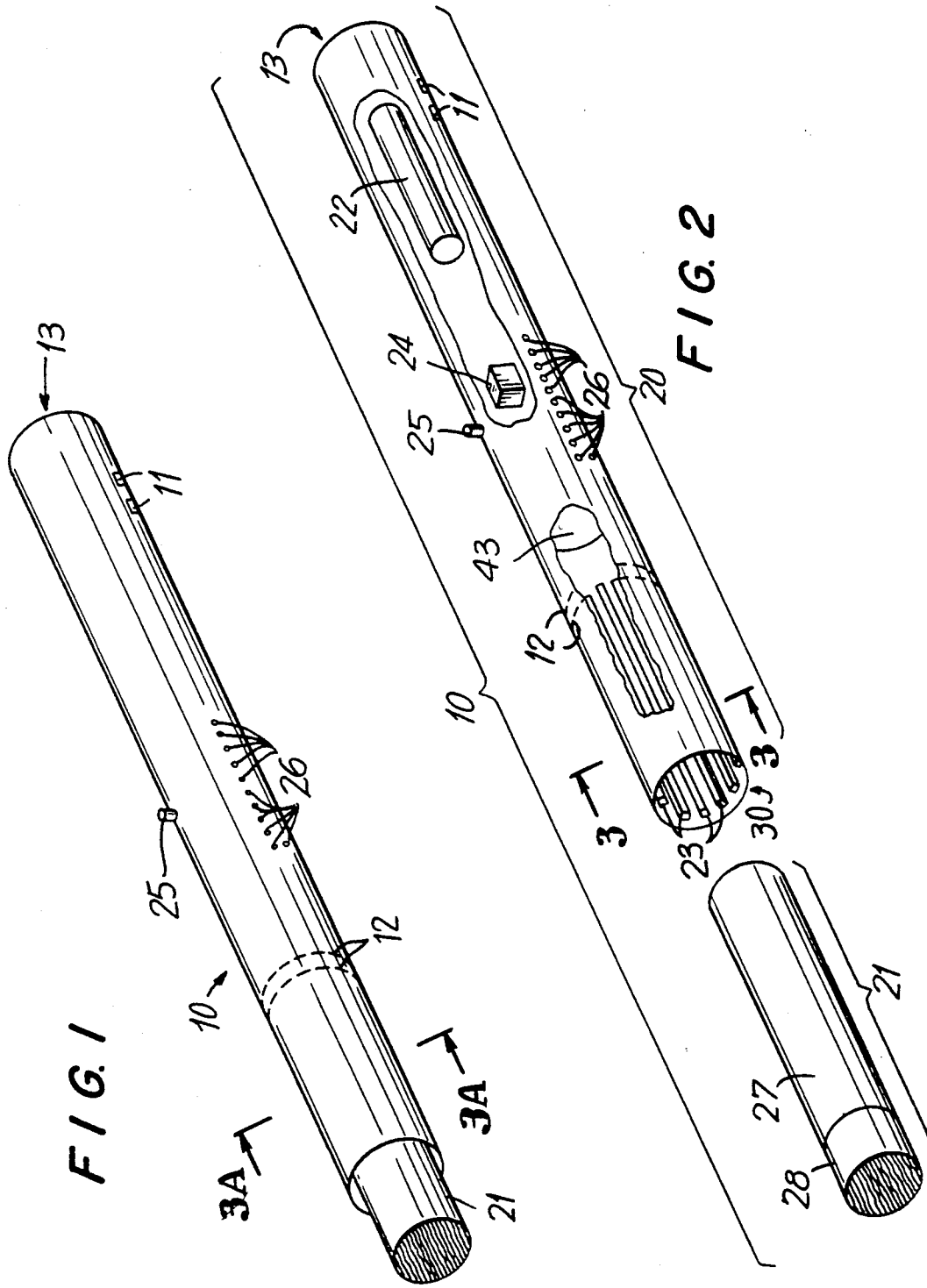


FIG. 1

FIG. 2

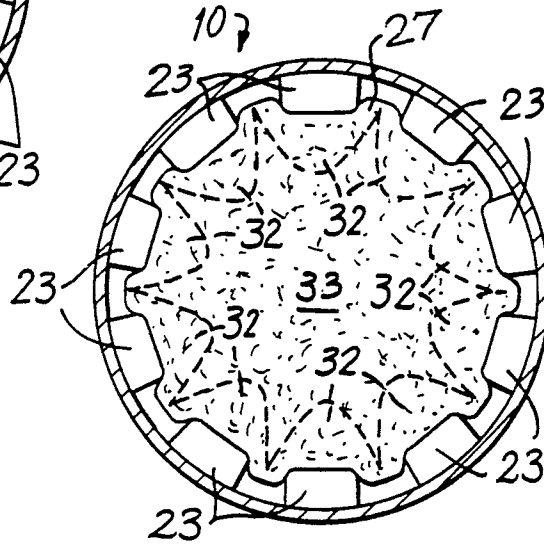
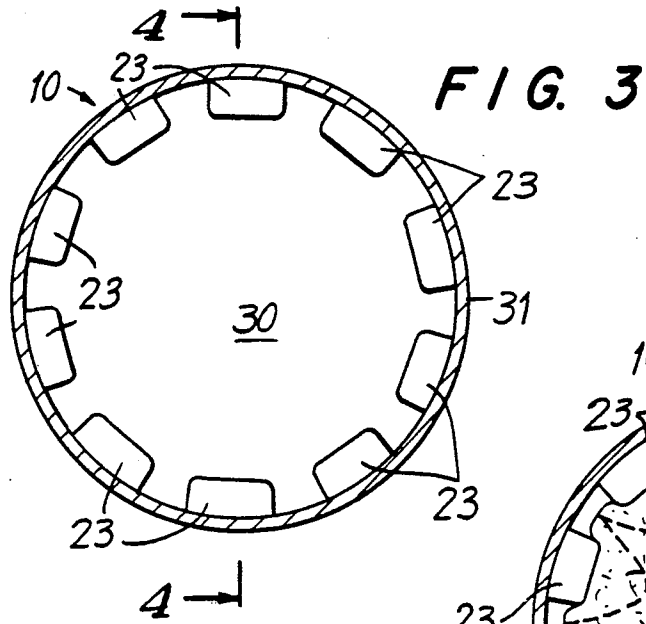


FIG. 3A

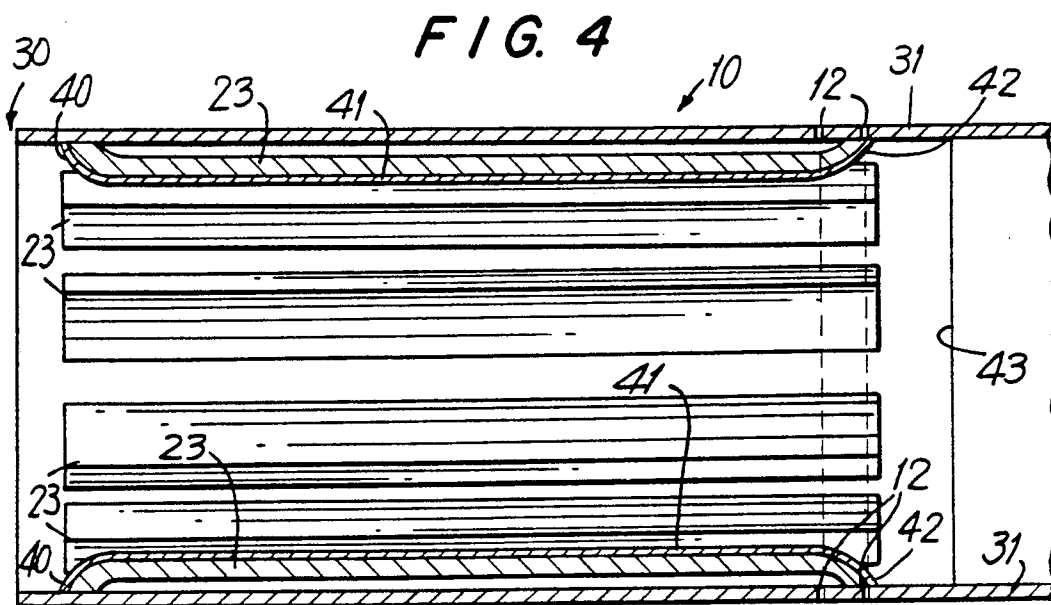
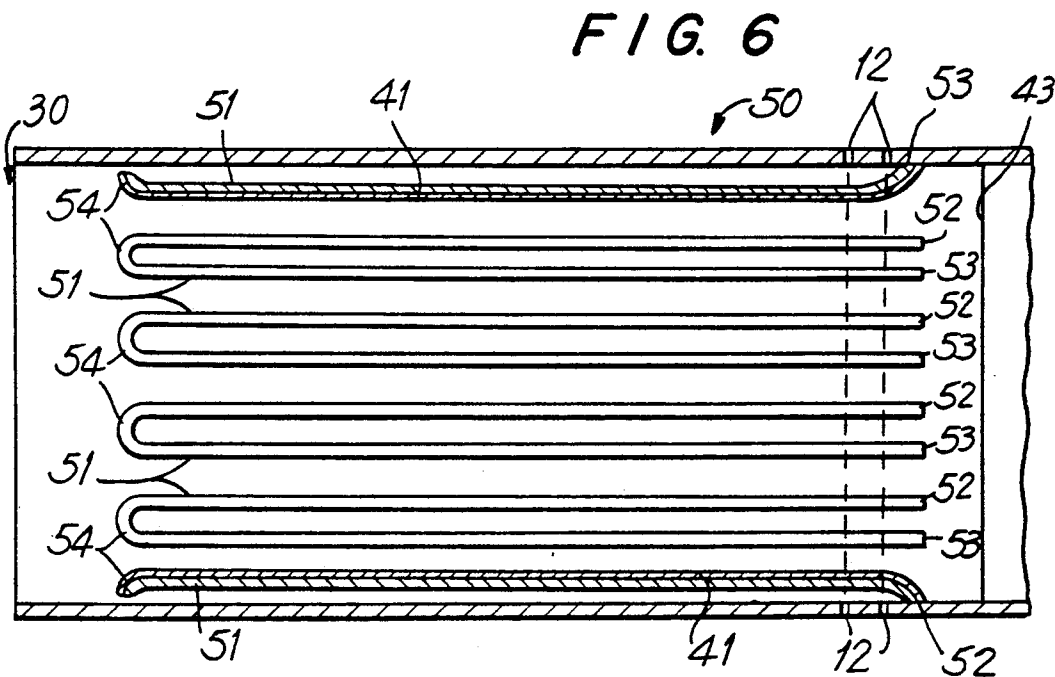
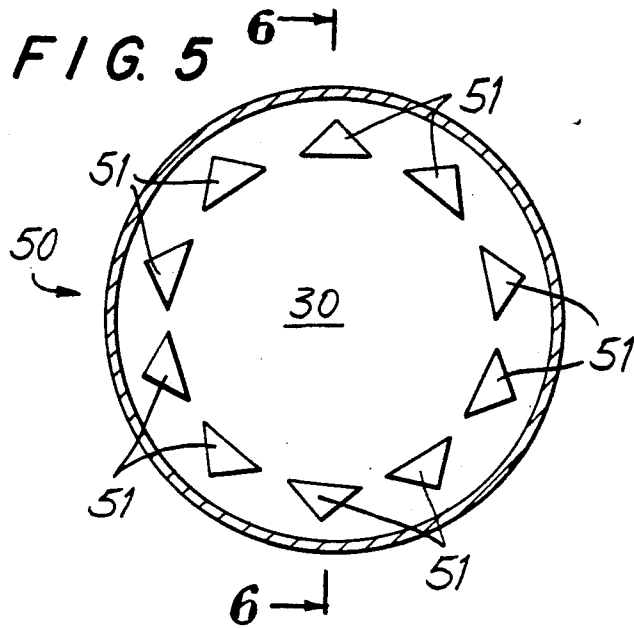


FIG. 4



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