United States Patent [19]

Nichols et al.

THERMALLY RELEASABLE FLAVOR [54] SOURCE FOR SMOKING ARTICLES

- [75] Inventors: Walter A. Nichols, Richmond; Harry V. Lanzillotti, Midlothian; Richard A. Thesing, Richmond; Alex S. Gergely, Powhatan; Constance H. Morgan, Midlothian; Bruce E. Waymack, Prince George; D. Bruce Losee, Jr., Richmond; John R. Hearn, Richmond; Johnny L. Miller, Richmond, all of Va. [73] Assignee: Philip Morris Incorporated, New
- York, N.Y.
- Appl. No.: 222,831 [21]
- Filed: Jul. 22, 1988 [22] [51]
- Int. Cl.⁵ A24D 1/00; A24D 1/18 [52] U.S. Cl. 131/274; 131/275; 131/194; 131/335; 131/359; 131/353; 131/370;
 - 131/375
- [58] Field of Search 131/359, 369, 194, 370, 131/372, 375, 353, 355, 356

[56] **References** Cited

U.S. PATENT DOCUMENTS

27,214	11/1971	Nakahara et al
3,098,492	7/1963	Wurzburg .
3,219,041	11/1965	Bromberg .
3,404,690	10/1968	Mosby et al
3,410,279	11/1968	Mosby et al
3,447,539	6/1969	Briskin et al
3,540,456	5/1969	McGlumphy et al
3,550,598	6/1970	McGlumphy et al
3,584,630	6/1971	Inskeep .
3,608,560	9/1971	Briskin et al.
3,643,668	2/1972	Briskin et al.
3,713,451	1/1973	Bromberg .
3,738,374	6/1973	Bennett .
3,858,587	1/1975	Cavelli et al
3,885,574	4/1975	Bothwick et al
3,902,504	2/1975	Owens, Jr. et al
3,931,824	1/1976	Miano et al
4,008,723	2/1977	Bothwick et al.
4,286,604	9/1981	Ehretsmann et al
4,291,711	9/1981	Berger .
4,333,484	6/1982	Keritsis .
4,341,228	7/1982	Keritsis et al
4,391,285	7/1983	Burnett et al
4,481,958	11/1984	Raine et al
4,510,950	4/1985	Keritsis et al

DOCKF

4,981,522 [11] Patent Number:

Date of Patent: Jan. 1, 1991 [45]

4,513,756	4/1985	Pittman et al.
4,625,737	12/1986	Keritsis et al.
4,632,131	12/1986	Burnett et al
4,655,229	4/1987	Sensabaugh, Jr. et al
4,708,151	11/1987	Shelar .
4,714,082	12/1987	Banerjee et al
4,724,850	2/1988	Graves .
4,732,168	3/1988	Resce et al
4,756,318	7/1988	Clearman et al
4,771,795	9/1988	White et al
4,793,365	12/1988	Sensabaugh, Jr. et al.
4,858,630	8/1989	Banerjee et al.
4,862,905	12/1987	Green, Jr. et al
4,943,941	3/1990	Boyd et al

FOREIGN PATENT DOCUMENTS

117355	9/1984	European Pat. Off
174645	3/1986	European Pat. Off.
212234	3/1987	European Pat. Off
232166	8/1987	European Pat. Off
245732	11/1987	European Pat. Off
246107	11/1987	European Pat. Off
254842	2/1988	European Pat. Off
254848	2/1988	European Pat. Off
270738	6/1988	European Pat. Off
270916	6/1988	European Pat. Off
270944	6/1988	European Pat. Off
271036	6/1988	European Pat. Off
277519	8/1988	European Pat. Off
280262	8/1988	European Pat. Off
280990	9/1988	European Pat. Off
2416876	9/1974	Fed. Rep. of Germany .
275420	8/1951	Switzerland .
1185887	3/1970	United Kingdom .
1431045	4/1976	United Kingdom .
1597106	9/1981	United Kingdom .

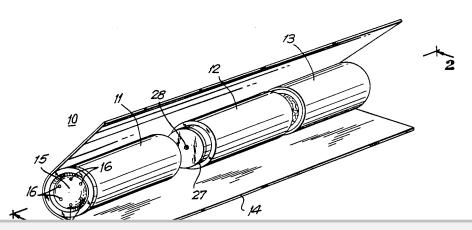
Primary Examiner-V. Millin

Attorney, Agent, or Firm-Robert M. Isackson

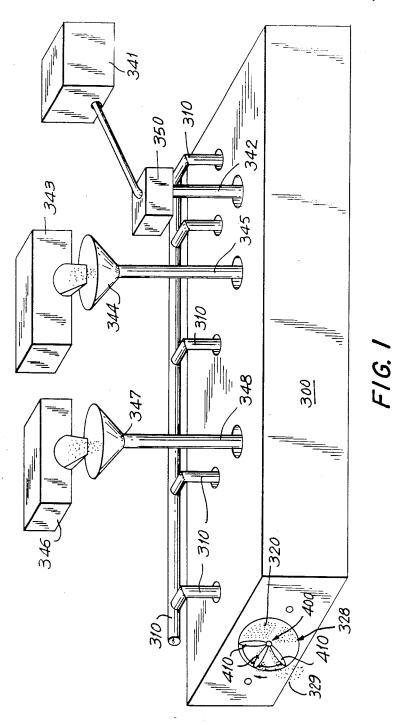
ABSTRACT

A flavor source to be used as a thermally releasable flavorant for smoking articles that do not combust tobacco. The material includes tobacco particles, an aerosol precursor that forms an aerosol upon exposure to heat, and a filler material that absorbs and radiates heat to minimize the likelihood that the flavor material will ignite. The material is mixed in an extruder, extruded through a die, and cut into pellets having a substantially uniform shape. The pellets are loaded into a chamber for inclusion in a smoking article as a flavor generator.

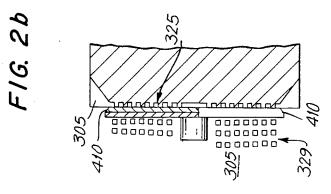
28 Claims, 5 Drawing Sheets

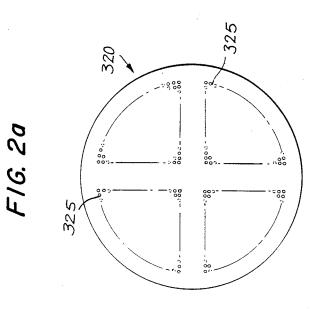


[57]



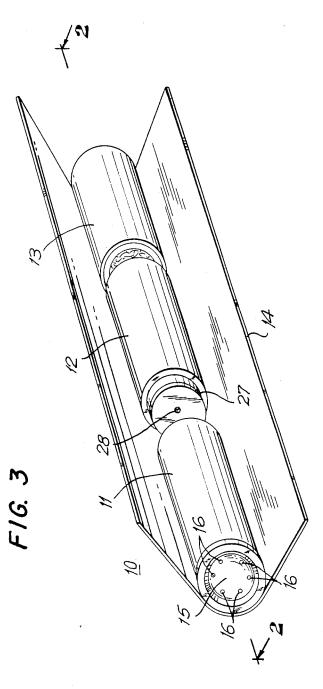
DOCKET A L A R M Find authenticated court documents without watermarks at <u>docketalarm.com</u>.



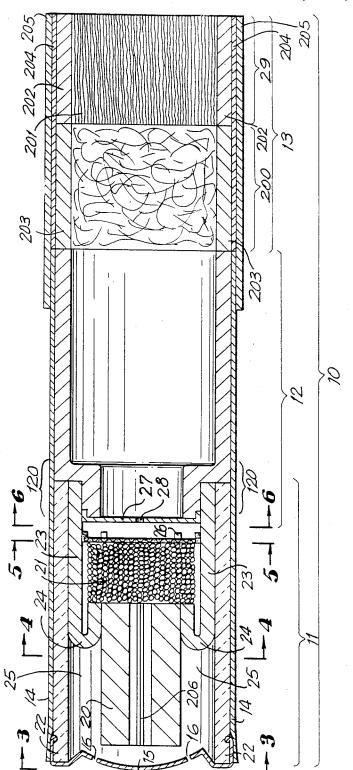


OCKET LARM Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

Α



Α



F16.4

DOCKET A L A R M Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

DOCKET A L A R M



Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.