9804257A-2

IPDS's copy!

PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : A24F 47/00	A1	(11) International Publication Number: WO 98/23171
		(43) International Publication Date: 4 June 1998 (04.06.98)

(21) International Application Number: PCT/US97/20967

(22) International Filing Date: 25 November 1997 (25.11.97)

(30) Priority Data:
08/756,223 25 November 1996 (25.11.96) US

(71) Applicant: PHILIP MORRIS PRODUCTS INC. [US/US]; 3601 Commerce Road, Richmond, VA 23234 (US).

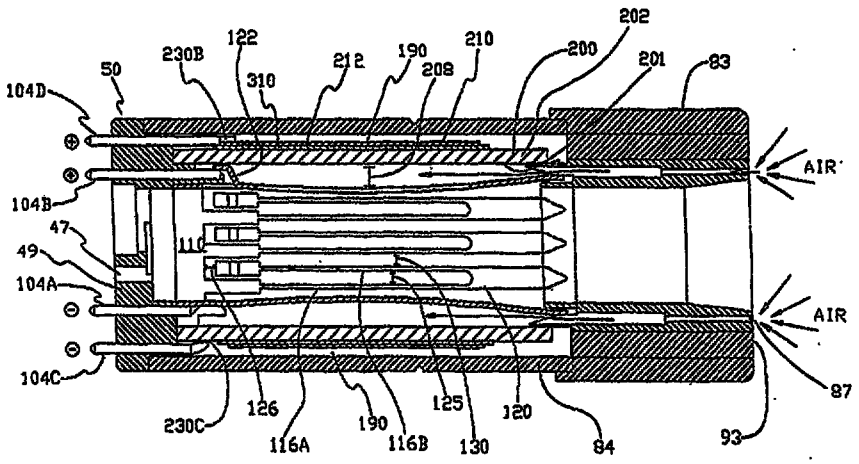
(72) Inventors: ADAMS, John, M.; 6592 Hartford Oaks Drive, Machanicsville, VA 23116 (US). CROWE, William, J.; 11120 Chalkley Road, Chester, VA 23831 (US). FLEISCHHAUER, Grier, S.; 1004 Lady Jean Court, Midlothian, VA 23113 (US). FOURNIER, Jay, A.; 11771 Wexwood Drive, Richmond, VA 23236 (US). HAJALIGOL, Mohammad, R.; Apartment H, 3322 Old Courthouse Road, Richmond, VA 23236 (US). HOUCK, Willie, G., Jr.; 7753 Lake Forest Drive, Richmond, VA 23235 (US). LOSEE, Donald, B.; 3912 Park Avenue, Richmond, VA 23221 (US). MORGAN, Constance, H.; 3721 Whitewood Road, Richmond, VA 23235 (US). NAWORAL, John, D.; 3216 Nuttree Woods Drive, Midlothian, VA 23112 (US). NUNNALLY, H., Neal; 2408 St. Regis Drive, Richmond, VA 23236 (US). PAINE, John, B., III; 13630 Trilithon Road, Midlothian, VA 23113 (US). RAYMOND, Wynn, R.; 6401 Wilton Road, Chesterfield, VA 23832 (US). RIPLEY, Robert, L.; 2427 Manakintown Ferry Road, Midlothian, VA 23113 (US). SEEMAN, Jeffrey, I.; 12001 Bollingbrook Place, Richmond, VA 23236 (US). SPRINKEL, Francis, M.; 11017 Cedar Lane, Glen Allen, VA 23059 (US). WATKINS, Michael, L.; 3318 Grove Avenue, Chester, VA 23831 (US).

(74) Agents: MAGNONE, Joseph, R. et al.; Burns, Doane, Swecker & Mathis, L.L.P., P.O. Box 1404, Alexandria, VA 22313–1404 (US).

(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: METHOD AND APPARATUS FOR USING, CLEANING, AND MAINTAINING ELECTRICAL HEAT SOURCES AND LIGHTERS USEFUL IN SMOKING SYSTEMS AND OTHER APPARATUSES



(57) Abstract

Methods and apparatuses for cleaning an electrical lighter are provided. A sleeve, e.g., ceramic or metal, surrounds the heater fixture, and a resistive heating element (210) is in thermal proximity with the sleeve. The resistive heating element (210) is either a dedicated element or the cigarette heating elements (210). The sleeve serves as an aerosol barrier and condensate accumulator to protect other components. Periodically, e.g., substantially contemporaneously with a battery recharge, the heating element (210) is activated to thermally liberate condensates deposited on the sleeve during smoking and also heats, and thereby cleans, other components. Also, a cleaning element is optionally inserted into the cigarette receptacle of the electrical lighter or placed at the exit thereof to absorb, attract and/or catalytically break down the thermally liberated condensates. The sleeve also directs a desired flow path for drawn air within an electrical lighter toward the cigarette.