



(51) International Patent Classification:
G03G 21/10 (2006.01)

(21) International Application Number:
PCT/US2010/030171

(22) International Filing Date:
7 April 2010 (07.04.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
12/421,725 10 April 2009 (10.04.2009) US

(71) Applicant (for all designated States except US): **LEX-
MARK INTERNATIONAL, INC** [US/US]; 740 West
New Circle Road, Lexington, KY 40550 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BROWN, Stephen,
Andrew** [US/US]; 109 Thomas Lane, Georgetown, KY
40324 (US). **GAYNE, Jarrett, Clark** [US/US]; 1041

Marco Lane, Lexington, KY 40509 (US). **GIBSON,
Nicholas, Fenley** [US/US]; 1550 Trent Blvd. #303, Lex-
ington, KY 40515 (US). **VEGO, Asmund** [NO/US]; 715
Franklin Avenue, Lexington, KY 40508 (US).

(74) Agent: **PEZDEK, John, V.**; Lexmark International, Inc.,
740 West New Circle Road, Lexington, KY 40550 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD,
SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: AIR DUCT AND TONER CARTRIDGE USING SAME

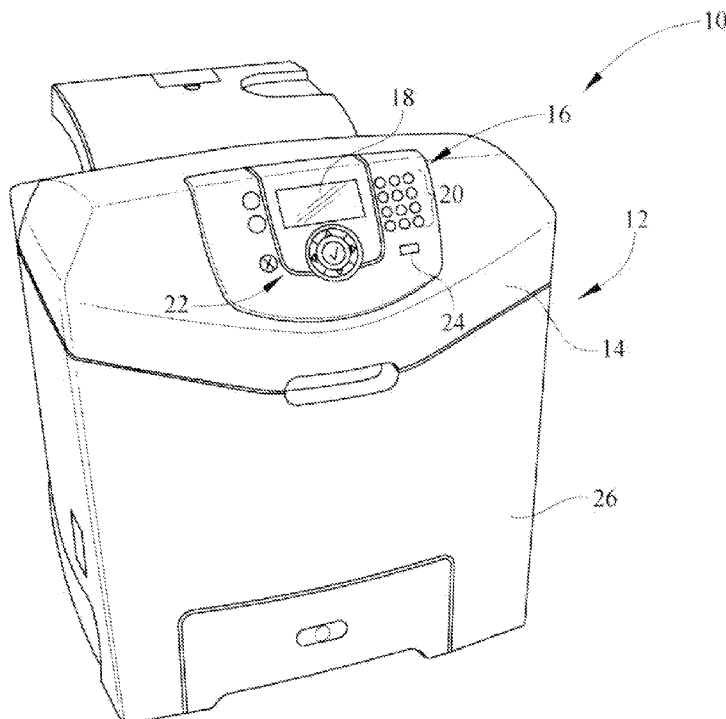


FIG. 1

(57) Abstract: The present disclosure relates to a cartridge for containing toner material used in an image-forming device. The cartridge comprises a developer roll, two J-seals that provide interfaces with the developer roll at the ends thereof, and an air duct that conducts airflow across the inter-
faces to cool the developer roll and seals. The air duct comprises an elongated hollow body and a pair of nozzles in fluid communication with the hollow body. One of the nozzles is disposed at a distal end of the developer roll near one J-seal, and the other of the nozzles is disposed at a proximal end of the developer roll near the second J-seal.



GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report (Art. 21(3))*
- *with amended claims (Art. 19(1))*