

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
11 April 2002 (11.04.2002)

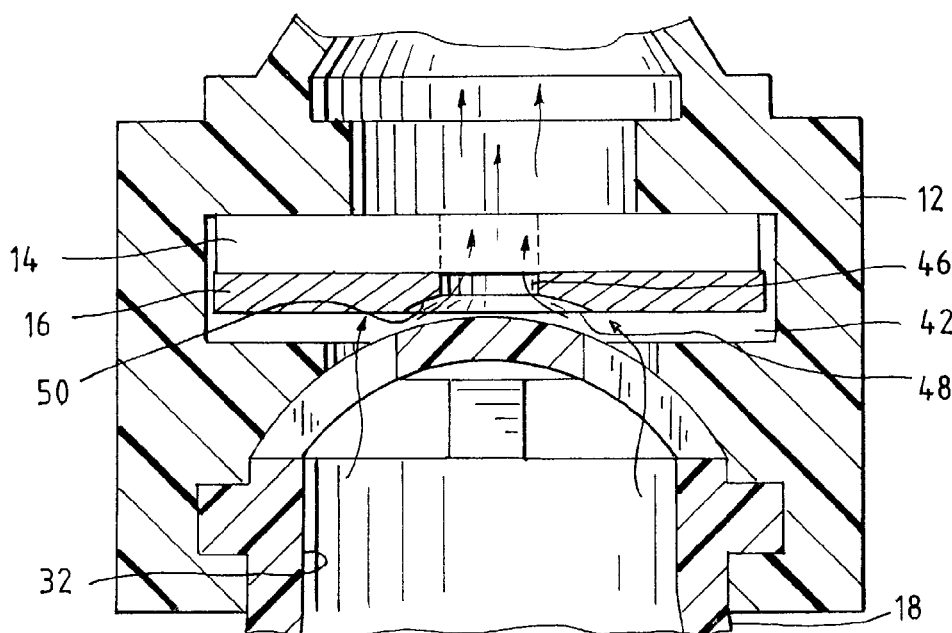
PCT

(10) International Publication Number
WO 02/28641 A1

- (51) International Patent Classification⁷: **B41F 31/08**, 31/02
- (21) International Application Number: PCT/US01/30952
- (22) International Filing Date: 2 October 2001 (02.10.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
09/677,432 2 October 2000 (02.10.2000) US
- (71) Applicant: **SONOCO DEVELOPMENT, INC.**
[US/US]; North Second Street, Hartsville, SC 29550 (US).
- (72) Inventors: **REA, Keith, R.**; 2132 Tudor Lane, Florence, SC 29505 (US). **KEESE, Patrick, B.**; 3313 Stafford Court, Florence, SC 29501 (US).
- (74) Agents: **FASSNACHT, Harold, J.** et al.; Bullwinkel Partners, Ltd., Suite 1300, 19 South LaSalle Street, Chicago, IL 60603 (US).
- (81) Designated States (*national*): AU, CA, MX, SG.
- (84) Designated States (*regional*): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).
- Declaration under Rule 4.17:**
— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AU, CA, MX, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR)
- Published:**
— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: INK CARTRIDGE VALVE SYSTEM



(57) Abstract: An improved ink cartridge dispensing valve system (10) is provided. The valve system (10) works on the same principle as a ball valve to automatically dispense ink when subjected to pressure. The valve system (10) includes an attachment post (18) and an attachable nozzle (12). The attachment post (18) is an integral part of the dispensing end of the ink cartridge and is recessed so that the cartridge can be easily shipped without damaging the attachment post (18). The attachable nozzle (12) fits over the attachment post (18) and opens or closes depending on whether pressure is placed on it by the ink in the cartridge.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.