(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
10 April 2003 (10.04.2003)

PCT

(10) International Publication Number
WO 03/028797 A1

(51) International Patent Classification[7]: A61M 35/00, 5/30, A61K 9/00, A61M 37/00, A01K 11/00, A61M 11/00, A61D 7/00

(21) International Application Number: PCT/US02/13198

(22) International Filing Date: 24 April 2002 (24.04.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/967,603 28 September 2001 (28.09.2001) US

(71) Applicant: HEWLETT-PACKARD COMPANY [US/US]; Intellectual Property Administration, PO Box 272400, Mail Stop 35, Fort Collins, CO 80527-2400 (US).

(72) Inventors: PICKUP, Ray, L.; 18320 NE 198th Ave, Brush Prairie, WA 98606 (US). LO, Clement, C.; 5740 Southwood Dr, Lake Oswego, OR 97035 (US). NOONAN, William, D.; 15470 SW Bell Rd, Sherwood, OR 97140 (US).

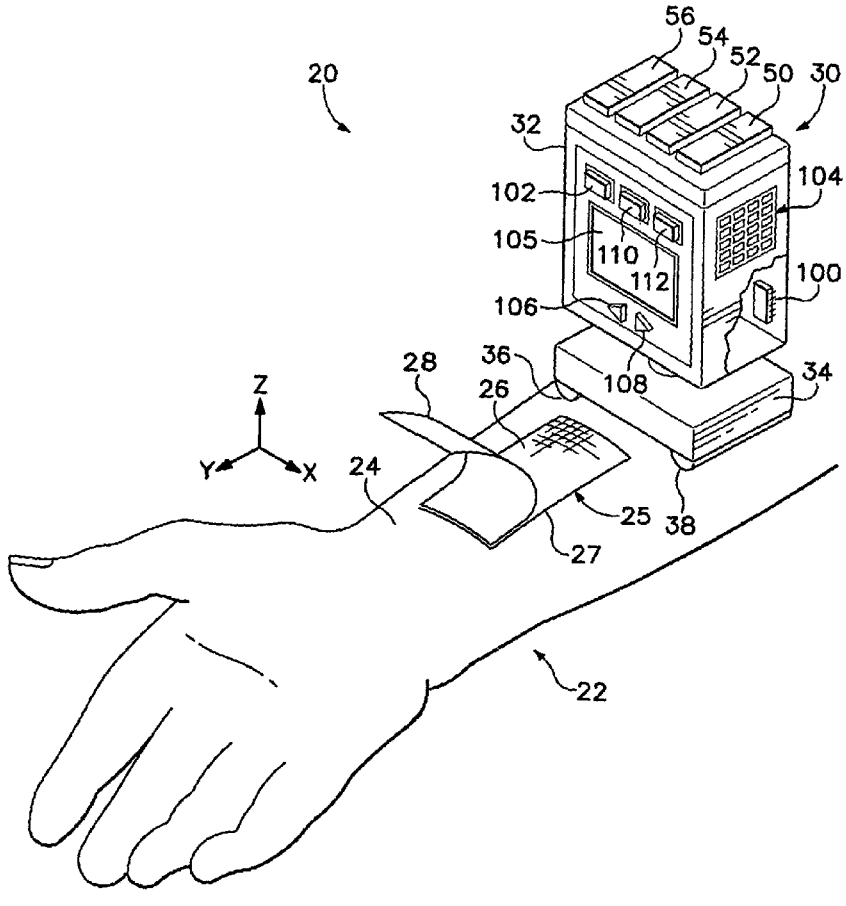
(74) Agents: WISDOM, Gregg, W. et al.; Hewlett-Packard Company, Intellectual Property Administration, PO Box 272400, MS 35, Ft. Collins, CO 80527-2400 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW.

(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).

[Continued on next page]

(54) Title: CUTANEOUS ADMINISTRATION SYSTEM



(57) Abstract: Bioactive agents are cutaneously delivered by a thermal or piezoelectric jet dispenser (30). The dispenser (30) propels precise volumes of droplets toward the skin (24), where they exert a local or topical effect, or move through the skin (24) for transdermal systemic delivery. Drugs are either delivered directly to the skin (24), or are introduced into a transdermal patch (25). The dispenser (30) can be used to resupply a transdermal patch (25) with drug instead of replacing the patch. A controller (100, 220) in the dispenser is capable of accurately controlling the delivery of multiple different drugs, and can be programmed to change drug regimens in response to a changing medical condition of a patient, for example in response to information from a sensor. In some embodiments, the dispenser acts as an electromechanical patch.

WO 03/028797 A1

Published:
— *with international search report*

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.