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(US). SUTTER, Diane, E. [US/US]; 107 N. Atley Lane, Cary, NC 27513 (US). MARTIN, Frank, E. [US/US]; 2807 Barton Road, Durham, NC 27717-1595 (US). HAIDER, M., Ishaq [US/US]; 204 Ketrick Court, Morrisville, NC 27560 (US).

(74) Agent: SCHMIDT, Richard, D.; Venable, Baetjer, Howard & Civiletti, LLP, 1201 New York Avenue, Suite 1000, P.O. Box 34385, Washington, DC 20043-9998 (US).

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(71) Applicant (*for all designated States except US*): BECTON, DICKINSON AND COMPANY [US/US]; Intellectual Property Department, Mail Code 089, 1 Becton Drive, Franklin Lakes, NJ 07417-1880 (US).

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(72) Inventors; and
(75) Inventors/Applicants (*for US only*): LASTOVICH, Alexander, G. [US/US]; 8800 Klondike Court, Raleigh, NC 27615 (US). FENTRESS, James, K. [US/US]; 2309 Duck Pond Circle, Apt.1, Morrisville, NC 27560 (US). GRIGGS, Julia, E. [US/US]; 500C Golden Horseshoe Circle, Morrisville, NC 27560 (US). PETTIS, Ronald, J. [US/US]; 529 Darby Glen Lane, Durham, NC 227713

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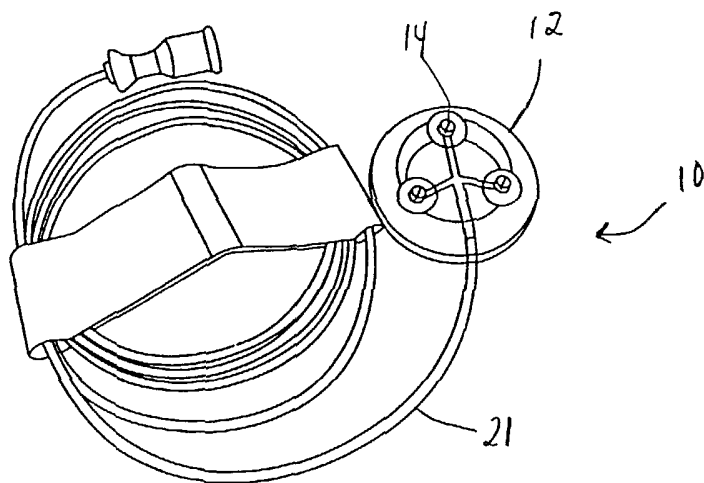


FIG. 1

(57) Abstract: An apparatus for delivering or withdrawing a fluid through at least one layer of the skin is provided. A device (10) includes a body (12) having a top face (20), a bottom face (18), a side edge (16) and at least one channel (22). The bottom face (18) includes a first surface area (28) and a second surface area (30) adjacent to and recessed at a first distance from the first surface area (28). The bottom face (18) further includes at least one raised protrusion (32) disposed on the second surface area (30). The protrusion (32) has a height from the first surface (28) greater than the first distance. At least one dermal-access member (14) is provided in the protrusion (32) and is in fluid communication with the channel (22) to deliver or withdraw the fluid. The dermal-access member (14) extends at least 1 mm from the protrusion (32). A mechanism drives the device (10) against the skin at a calculated speed of about 6 m/s to about 18 m/s.

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B. FIELDS SEARCHED

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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3,086,530 A (GROOM) 23 April 1963 (23.04.1963), See figures.	1-9
A	US 3,595,231 A (PISTOR) 27 July 1971 (27.07.1971), See figures.	1-9
A	US 5,997,501 A (GROSS et al) 07 December 1999 (07.12.1999), See figures.	1-9
A	US 6,024,706 A (HSIAO) 15 February 2000 (15.02.2000), See figures.	1-9
A	US 6,183,434 B1 (EPPSTEIN) 06 February 2001 (06.02.2001), See figures.	1-9
A,E	US 6,629,949 B1 (DOUGLAS) 07 October 2003 (07.10.2003), See figures.	1-9

Further documents are listed in the continuation of Box C.

See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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Mail Stop PCT, Attn: ISA/US
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Sharon Kennedy

Telephone No. 703/308-0858