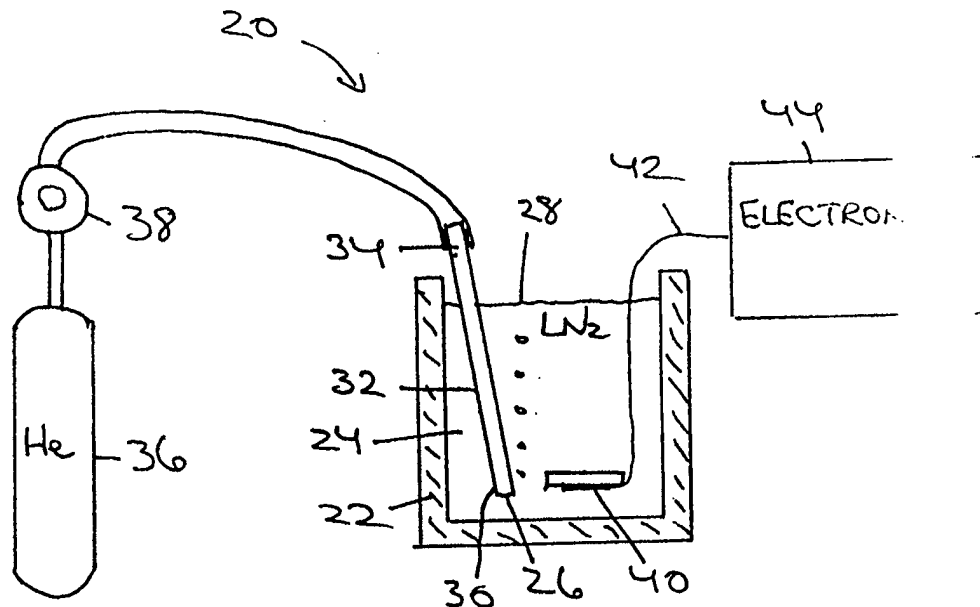




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<p>(21) International Application Number: PCT/US97/22984 (22) International Filing Date: 29 December 1997 (29.12.97) (30) Priority Data: 08/777,111 30 December 1996 (30.12.96) US (71) Applicant: BIOMAGNETIC TECHNOLOGIES, INC. [US/US]; 9727 Pacific Heights Boulevard, San Diego, CA 92121 (US). (72) Inventors: DiIORIO, Mark, S.; 10255 Rue Chamberry, San Diego, CA 92131 (US). YANG, Kai-Yueh; 12590 Darkwood Road, San Diego, CA 92129 (US). YOSHIKUMI, Shozo; 13087 Trail Dust Avenue, San Diego, CA 92129 (US). (74) Agents: GARMONG, Gregory, O.; P.O. Box 12460, Zephyr Cove, NV 89448 (US) et al.</p>		<p>(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, HU, 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, TJ, TM, TR, TT, UA, UG, UZ, VN, ARIPO patent (GH, GM, 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).  <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>  (88) Date of publication of the international search report: 17 September 1998 (17.09.98)</p>

(54) Title: COOLING USING A CRYOGENIC LIQUID AND A CONTACTING GAS



(57) Abstract  
A cooling apparatus (20) includes a dewar (22) and a quantity of liquid nitrogen (24) within the container (22). Gaseous helium is contacted to the liquid nitrogen, either by contacting its top surface or by being bubbled through the liquid nitrogen. The temperature of the cryogenic liquid (24) is lowered by the contact of the gas.

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INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US97/22984

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC(6) :F17C 11/00 US CL :62/46.1 According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) U.S. : 62/46.1, 45.1, 47.1, 50.1, 259.2, 457.9, 114, 51.1; 220/88.3 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched NONE Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) NONE		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3,710,549 A (NICHOLS et al) 16 January 1973, see entire document.	1-13
A	US 4,088,193 A (COLGATE) 09 May 1978, see entire document.	1-13
A	US 4,593,532 A (KIMURA et al) 10 June 1986, see entire document.	1-13
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