



- (51) **International Patent Classification:**
C12M 1/38 (2006.01) *B01L 7/00* (2006.01)
- (21) **International Application Number:**
PCT/US2009/034012
- (22) **International Filing Date:**
13 February 2009 (13.02.2009)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/029,128 15 February 2008 (15.02.2008) US
- (71) **Applicant** (*for all designated States except US*): **BIO-RAD LABORATORIES, INC.** [US/US]; 1000 Alfred Nobel Drive, Hercules, California 94547 (US).
- (72) **Inventors; and**
- (75) **Inventors/Applicants** (*for US only*): **CEREMONY, Jeffrey Mark** [US/US]; 1374 Leafwood Court, Fairfield, California 94534 (US). **CHU, Daniel Y.** [US/US]; 310 North Wildwood, Hercules, California 94547 (US). **DOSHI, Deepak Kumar** [IN/US]; 1107 Forest Run, Hercules, California 94534 (US). **RUMBEOA, Rhoel** [US/US];

442 Dawson Creek Drive, Fairfield, California 94534 (US). **LORING, Dennis Wayne** [US/US]; 185 Village Place, Martinez, California 94553 (US). **PATT, Paul J.** [US/US]; 184 Silver Pine Lane, Blackhawk, California 94506 (US). **BALDWIN, Cliff** [US/US]; 710 Amber Lane, Oakpoint, Texas 75068 (US).

- (74) **Agents:** HEINES, M. Henry et al.; Townsend and Townsend and Crew LLP, Two Embarcadero Center, 8th Floor, San Francisco, California 94111-3834 (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, 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, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, 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:** THERMAL CYCLER WITH SELF-ADJUSTING LID

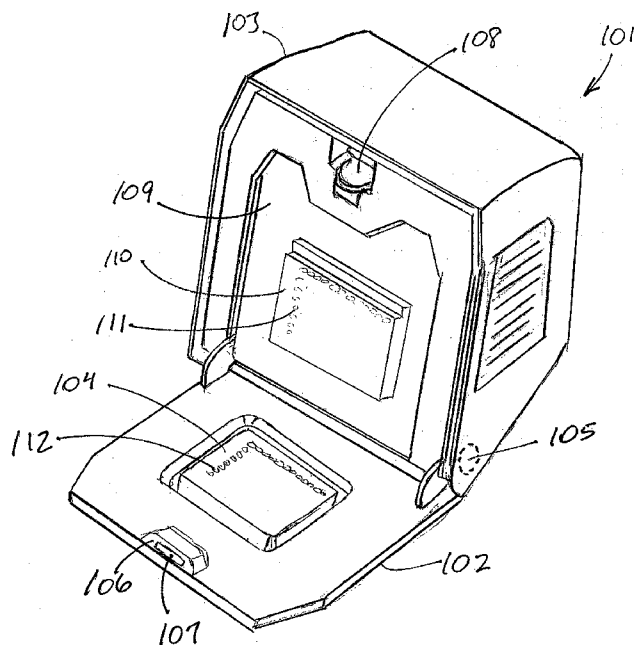


FIG. 1

(57) Abstract: A thermal cycling instrument for PCR and other reactions performed on multiple samples with temperature changes between sequential stages in the reaction procedure is supplied with a thermal block to provide rapid changes and close control over the temperature in each sample vessel and a pressure plate incorporated into a motorized lid that detects anomalies in the reaction vessels or in their positioning over the thermal block, and automatically adjusts the plate position to achieve an even force distribution over the sample vessels.



GM, KE, 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, 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))*