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(21) International Application Number: PCT/US97/15257 (22) International Filing Date: 29 August 1997 (29.08.97) (30) Priority Data: 08/726,728 7 October 1996 (07.10.96) US (71) Applicant: MAXWELL TECHNOLOGIES, INC. [US/US]; 8888 Balboa Avenue, San Diego, CA 92123 (US). (72) Inventors: FARAHMANDI, C., Joseph; 10572 Bernabe Drive, San Diego, CA 92179 (US); DISPENNETTE, John, M.; 1200 B Natoma Way, Oceanside, CA 92057 (US). BLANK, Edward; 5619 Raymar Avenue, San Diego, CA 92120 (US). KOLB, Alan, C.; 5838 Linea Del Cielo Rancho, Santa Fe, CA 92067 (US). (74) Agents: SAMPLES, Kenneth, H. et al.; Fitch, Even, Tabin & Flannery, Suite 900, 135 South LaSalle Street, Chicago, IL 60603 (US).		(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, GH, 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, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, ZW, ARIPO patent (GH, 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). Published With international search report.	
(54) Title: MULTI-ELECTRODE DOUBLE LAYER CAPACITOR			
Diagram illustrating the structure of the multi-electrode double layer capacitor. It shows two electrode stacks, Stack A (No Sleeves) and Stack B (Insulator Sleeves), connected by an interleave connection. Stack A consists of electrodes 135 and 136, while Stack B consists of electrodes 136 and 140. The interleave connection 141 is shown between the stacks.			
(57) Abstract A single cell, multi-electrode high performance double layer capacitor includes first (Stack A) and second (Stack B) flat stacks of interleaved electrodes (141) adapted to be housed in a closeable two-part capacitor case (Fig. 12) which includes only a single electrolyte seal (154, 156, 158). Each electrode stack has a plurality of electrodes connected in parallel, with the electrodes of one stack being interleaved with the electrodes of the other stack to form an interleaved stack (141), and with the electrodes of each stack being electrically connected to respective capacitor terminals. A porous separator sleeve (140) is inserted over the electrodes of one stack (Stack B) before interleaving to prevent electrical shorts between the electrodes. The electrodes are made by folding a compressible, low resistance, aluminum-impregnated carbon cloth (136), made from activated carbon fibers, around a current collector foil (132), with a tab (133) of the foils of each electrode of each stack being connected in parallel. The parallel-connected tabs (135, 142) are then connected to the respective capacitor terminals. The height of the interleaved stack is somewhat greater than the inside height of the closed capacitor case, thereby requiring compression of the interleaved electrode stack when placed inside of the case, and thereby maintaining the interleaved electrode stack under modest constant pressure. The closed capacitor case is filled with an electrolytic solution and sealed. A preferred electrolytic solution is made by dissolving an appropriate salt into acetonitrile (CH ₃ CN). In one embodiment, the two parts of the capacitor case (150, 152) are conductive and function as the capacitor terminals.			