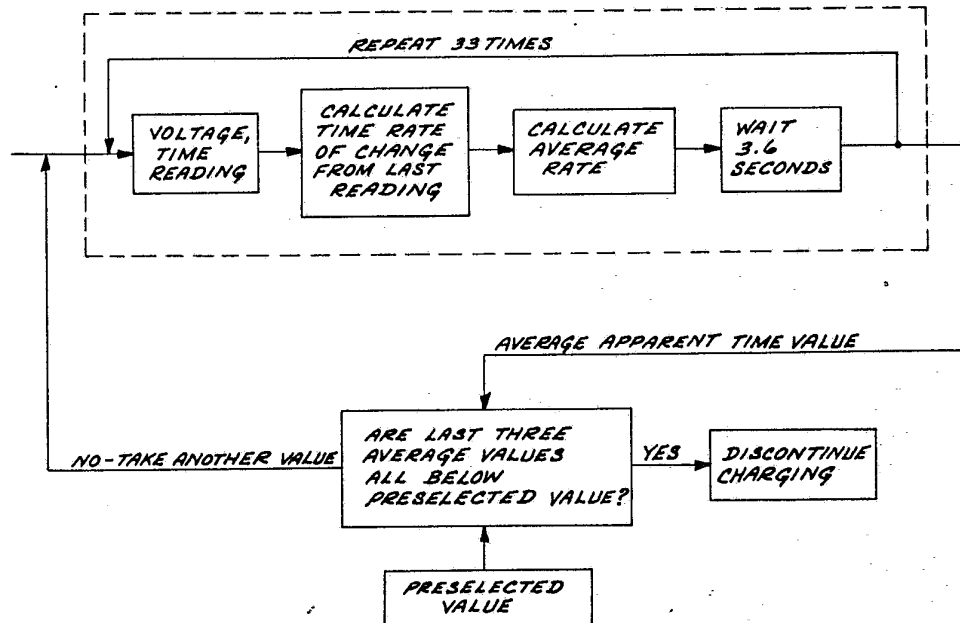




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification⁴ : H01M 10/48, H02J 7/10, H01M 10/44</p>	<p>A3</p>	<p>(11) International Publication Number: WO 87/ 02515 (43) International Publication Date: 23 April 1987 (23.04.87)</p>
<p>(21) International Application Number: PCT/US86/01900 (22) International Filing Date: 15 September 1986 (15.09.86) (31) Priority Application Number: 788,593 (32) Priority Date: 17 October 1985 (17.10.85) (33) Priority Country: US (71) Applicant: HUGHES AIRCRAFT COMPANY [US/US]; 7200 Hughes Terrace, Los Angeles, CA 90045-0066 (US). (72) Inventors: STADNICK, Steven, J. ; 341 Avenida Atezada, Redondo Beach, CA 90277 (US). ROGERS, Howard, H. ; 18361 Van Ness Avenue, Torrance, CA 90504 (US). (74) Agents: MITCHELL, Steven, M. et al.; Hughes Aircraft Company, Post Office Box 45066, Bldg. C1, M.S. A126, Los Angeles, CA 90045-0066 (US).</p>	<p>(81) Designated States: DE (European patent), FR (European patent), GB (European patent), JP. Published <i>With international search report. 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: 16 July 1987 (16.07.87)</p>	

(54) Title: CONTROL OF THE CHARGING OF PRESSURIZED GAS-METAL ELECTRICAL STORAGE CELLS



(57) Abstract

A process and apparatus for controlling the charging of pressurized gas-metal cells such as nickel-hydrogen cells, to prevent detrimental overcharging, wherein the time rate of change of a battery gas pressure index is monitored as a control parameter. When the time rate of change of the index falls below a preselected value, charging is discontinued. The cell gas pressure index can be gas pressure itself, or a quantity which is responsive to, and depends upon gas pressure, such as the deformation of a cell component.

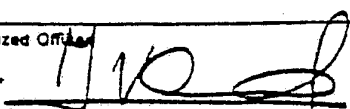
FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	FR	France	ML	Mali
AU	Australia	GA	Gabon	MR	Mauritania
BB	Barbados	GB	United Kingdom	MW	Malawi
BE	Belgium	HU	Hungary	NL	Netherlands
BG	Bulgaria	IT	Italy	NO	Norway
BJ	Benin	JP	Japan	RO	Romania
BR	Brazil	KP	Democratic People's Republic of Korea	SD	Sudan
CF	Central African Republic	KR	Republic of Korea	SE	Sweden
CG	Congo	LI	Liechtenstein	SN	Senegal
CH	Switzerland	LK	Sri Lanka	SU	Soviet Union
CM	Cameroon	LU	Luxembourg	TD	Chad
DE	Germany, Federal Republic of	MC	Monaco	TG	Togo
DK	Denmark	MG	Madagascar	US	United States of America
FI	Finland				

INTERNATIONAL SEARCH REPORT

International Application No. **PCT/US 86/01900**

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁴		
According to International Patent Classification (IPC) or to both National Classification and IPC		
IPC ⁴ : H 01 M 10/48; H 02 J 7/10; H 01 M 10/44		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
IPC ⁴	H 01 M 10/44; H 01 M 10/48; H 02 J 7/10	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁸		
III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹		
Category ⁹	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
A	US, A, 4392101 (DAVID A. SAAR) 5 July 1983 see abstract; column 5, lines 56-68; column 6; column 19, lines 65-68; column 20, lines 1-26; column 25, lines 17-68; column 26 --	1, 8
A	GB, A, 2019674 (YARDNEY) 31 October 1979 see abstract; page 1, lines 54-130; page 2 --	1
A	US, A, 3403317 (MILTON A. KNIGHT) 24 September 1968 see column 2, lines 40-72; column 3, lines 1-40 --	3, 4
A	GB, A, 1110032 (DYNAMIC INSTRUMENT CORP.) 18 April 1968 see page 2, lines 55-130; page 7 -----	1, 3, 4
<p>⁹ Special categories of cited documents: ¹⁰</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents; such combination being obvious to a person skilled in the art.</p> <p>"S" document member of the same patent family</p>		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
25th May 1987	22 JUN 1987	
International Searching Authority	Signature of Authorized Officer	
EUROPEAN PATENT OFFICE	M. VAN MOL 	

ANNEX TO THE INTERNATIONAL SEARCH REPORT ON

INTERNATIONAL APPLICATION NO.

PCT/US 86/01900 (SA 15470)

This Annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on 15/06/87

The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A- 4392101	05/07/83	EP-A- 0005840	12/12/79
		EP-A, B 0005841	12/12/79
		AU-A- 4763879	06/12/79
		CA-A- 1153061	30/08/83
		AU-B- 533402	24/11/83
		AT-B- E7830	15/06/84
GB-A- 2019674	31/10/79	FR-A, B 2424639	23/11/79
		DE-A, B, C 2903244	31/10/79
		JF-A- 54140942	01/11/79
		US-A- 4198594	15/04/80
		CA-A- 1114900	22/12/81
US-A- 3403317		None	
GB-A- 1110032		None	