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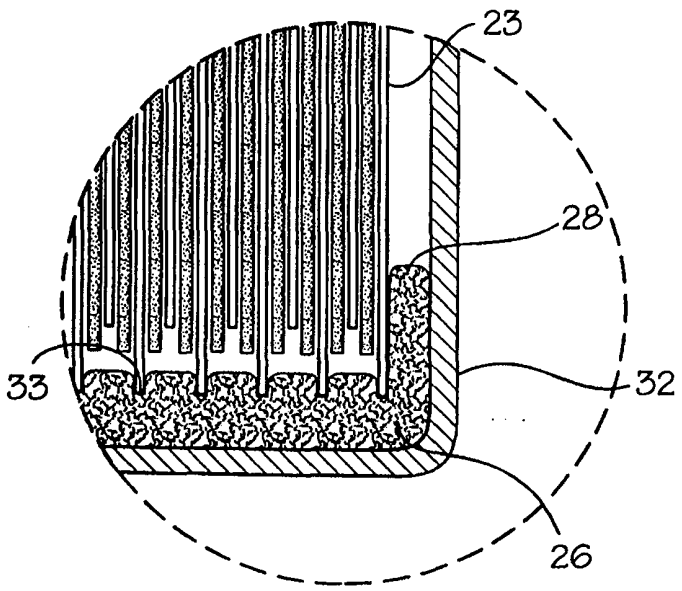
(54) Title: FOAM COLLECTOR FOR ELECTROCHEMICAL CELLS

(57) Abstract

An improved current collector for electrochemical cells is formed of a conductive porous foam. The foam is preferably a nickel foam as is often used as an electrochemical cell substrate. The high porosity foam's compressibility and resiliency provide an adaptive contact surface which accommodates variations in the shape and position of electrodes and other circuit elements. By using this material as an improved current collector, electrochemical cells are more easily produced with reduced internal resistance. Improved methods of assembly are a result of the nature of the high porosity foam material and its compliance. The foam collector may be used as a pressure connection or welded to the spiral edge of jelly-roll electrode assemblies. To increase effective contact area and also improve resistance to vibration forces, portions of the collector are compressed in a radial space between a jelly-roll assembly and the surrounding container. Foam current collectors according to the invention also have a low profile increasing the productive volume of the cell. The foam collector may be connected to the spiral edge of negative or positive electrodes of standard jelly-roll configuration cells. The advantages of reduced resistance are particularly beneficial to high drain rate cells such as nickel-metal hydride cells.



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INTERNATIONAL SEARCH REPORT

Inter onal Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01M2/26 H01M4/80

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H01M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, 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.
Y	PATENT ABSTRACTS OF JAPAN vol. 007, no. 174 (E-190), 2 August 1983 (1983-08-02) & JP 58 080265 A (YUASA DENCHI KK), 14 May 1983 (1983-05-14) abstract	1,2
Y	PATENT ABSTRACTS OF JAPAN vol. 006, no. 064 (E-103), 23 April 1982 (1982-04-23) & JP 57 007062 A (YUASA BATTERY CO LTD), 14 January 1982 (1982-01-14) abstract	1,2
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[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
31 May 2000	09/06/2000

Name and mailing address of the ISA	Authorized officer
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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