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Bailey

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(54) **BATTERY INCLUDING A NON-AQUEOUS MULTI-CELL SPIRAL-WOUND ELECTRODE ASSEMBLY**

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(75) Inventor: **John C. Bailey**, Columbia Station, OH (US)

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(73) Assignee: **Eveready Battery Company, Inc.**, St. Louis, MO (US)

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(21) Appl. No.: **09/094,820**

(22) Filed: **Jun. 15, 1998**

(51) **Int. Cl.**⁷ **H01M 10/04**

Primary Examiner—Gabrielle Brouillette

(52) **U.S. Cl.** **429/94; 429/99; 429/164; 429/159**

Assistant Examiner—M. Wills

(58) **Field of Search** 429/94, 99, 164, 429/159, 120; 29/623

(74) *Attorney, Agent, or Firm*—Russell H. Toye, Jr.; Robert W. Welsh

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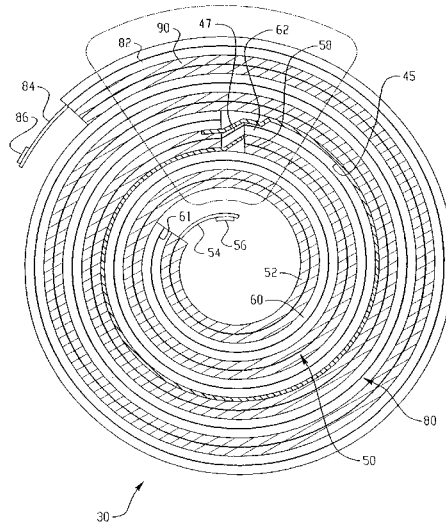
(57) **ABSTRACT**

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A battery construction is disclosed that includes a housing and a spiral-wound electrode assembly disposed in the housing and defining at least two electrochemical cells that are electrically connected in series. Both of the cells include wound layers of a positive electrode, a negative electrode, and a polymer electrolyte provided between the positive and negative electrode layers. The layers of each successive electrochemical cell are wound around the layers of the previous cell and are preferably separated therefrom by an insulating layer. By utilizing a polymer electrolyte, the need for expensive microporous separator layers is eliminated as is the need for providing separate sealed containers to construct a multi-cell battery. Thus, a less-expensive and space-efficient multi-cell spiral-wound electrode construction may be obtained.

24 Claims, 6 Drawing Sheets



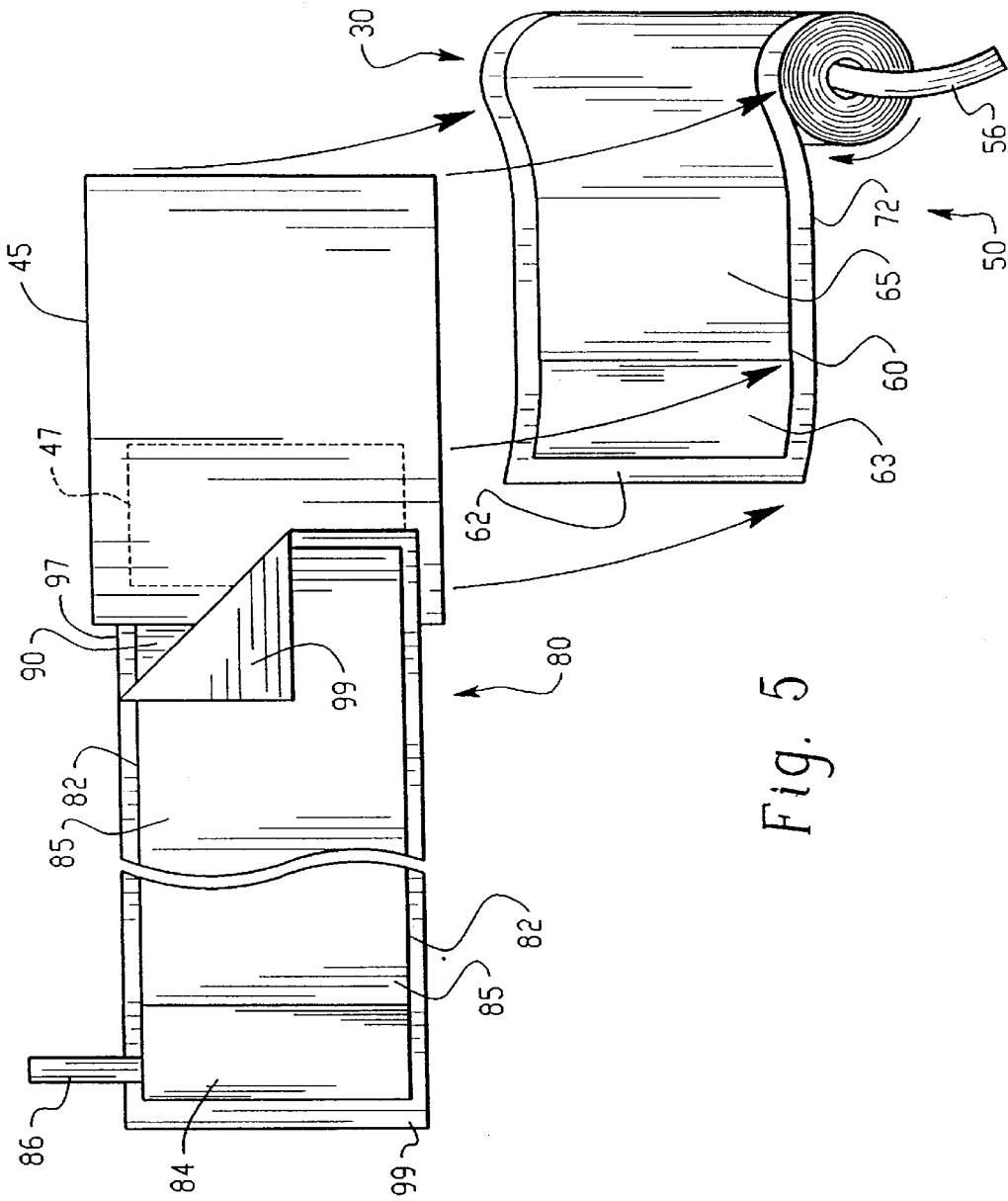


Fig. 5

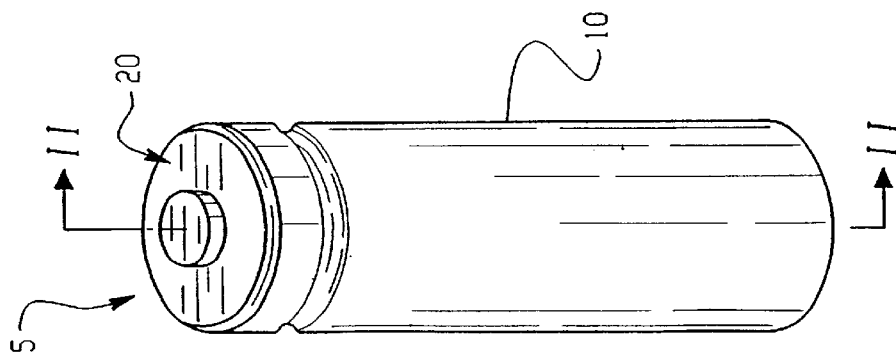


Fig. 1

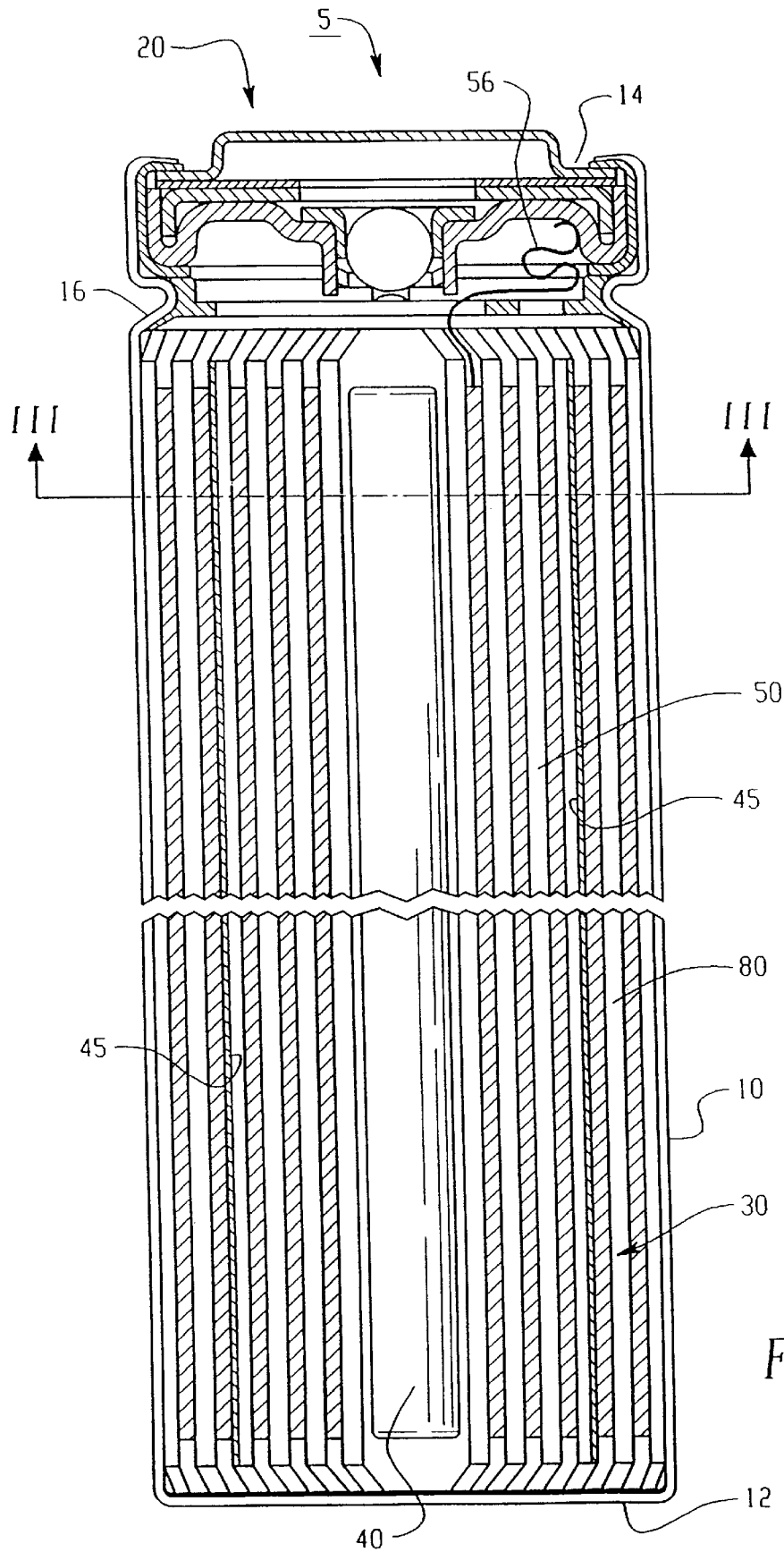


Fig. 2

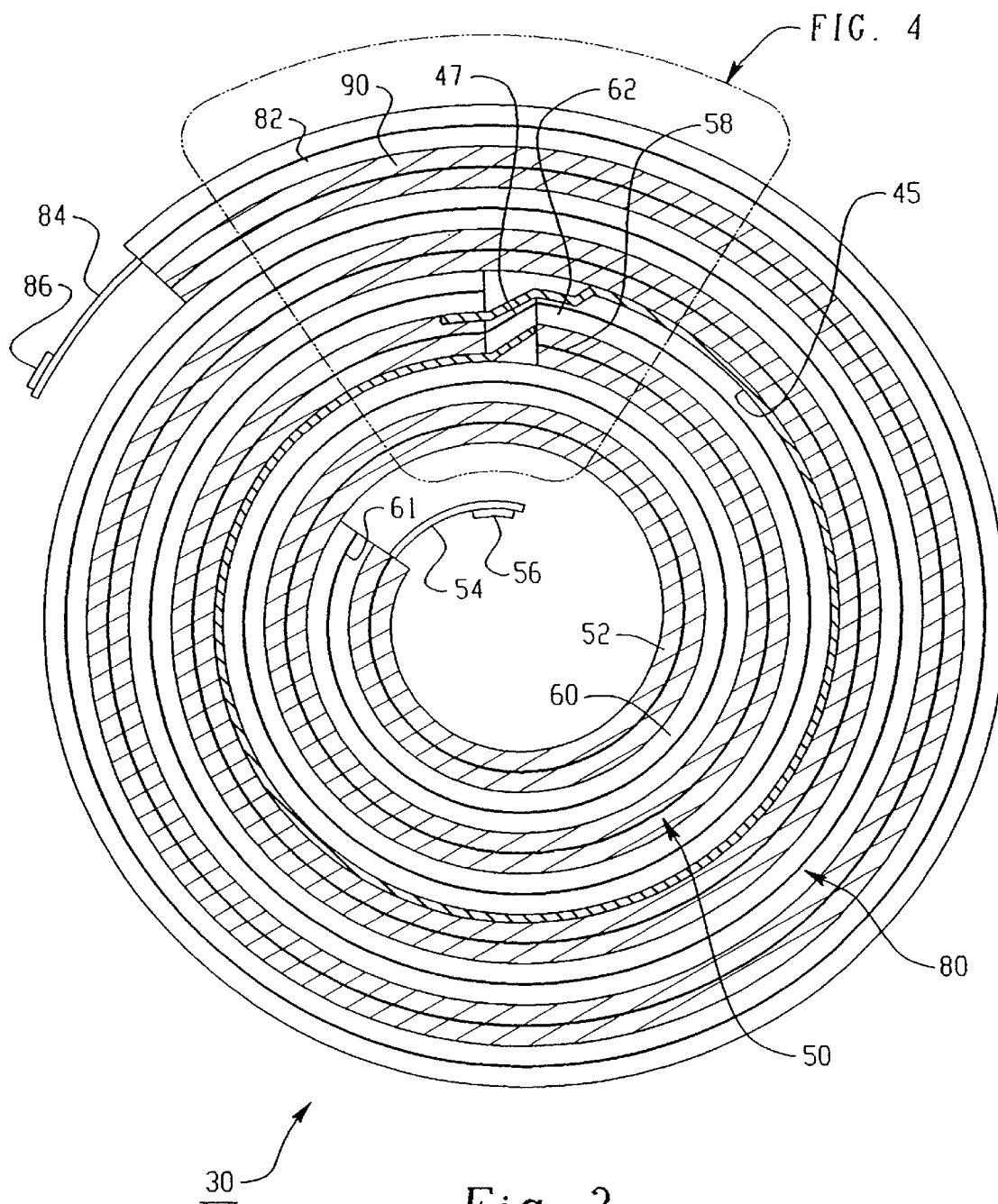


Fig. 3

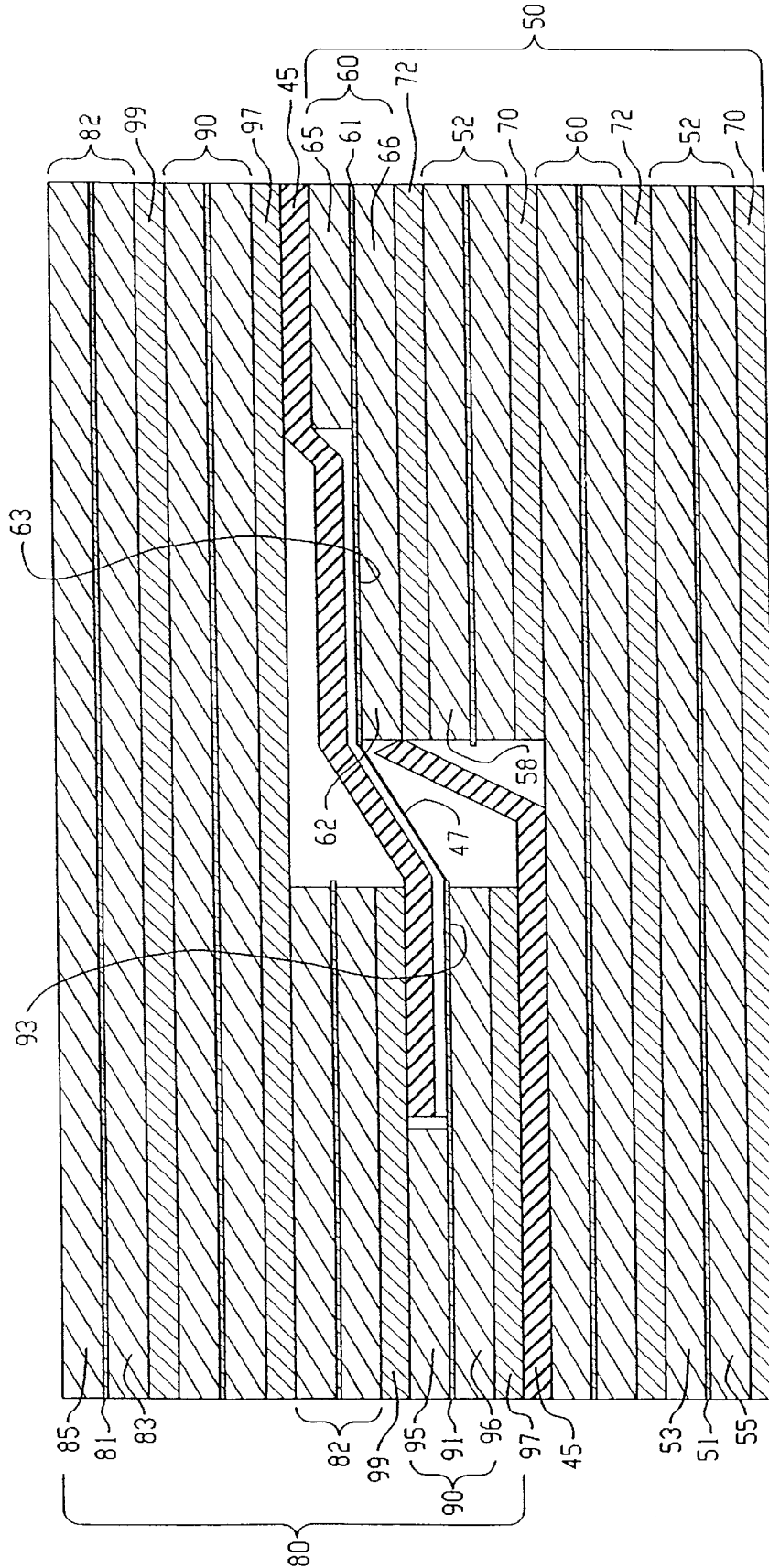


Fig. 4

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