



[54] **STRIP ELECTRODE WITH SCREEN PRINTING**

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[*] Notice: The term of this patent shall not extend beyond the expiration date of Pat. No. 5,682,884.

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Related U.S. Application Data

[63] Continuation of Ser. No. 281,131, Jul. 27, 1994, Pat. No. 5,682,884, which is a continuation of Ser. No. 888,264, May 22, 1993, abandoned, which is a continuation of Ser. No. 768,359, Sep. 30, 1991, abandoned, which is a continuation of Ser. No. 634,968, Jan. 7, 1991, abandoned, which is a continuation of Ser. No. 2,120, Jan. 12, 1987, abandoned, which is a continuation-in-part of Ser. No. 607,599, May 7, 1984, abandoned.

Foreign Application Priority Data

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[51] **Int. Cl.⁶** **A61B 5/05**

[52] **U.S. Cl.** **600/347; 600/345; 600/365; 204/403; 204/406; 204/407; 204/435**

[58] **Field of Search** 128/633, 634, 128/637, 692, 639; 204/153.1, 153.12, 402, 403, 406, 407, 435; 600/309, 345, 347, 348, 365, 368

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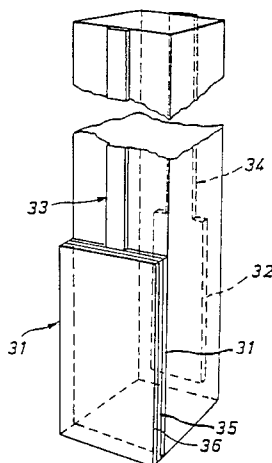
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Primary Examiner—David M. Shay

[57] **ABSTRACT**

A sensor system that detects a current representative of a compound in a liquid mixture features a two-electrode strip adapted for releasable attachment to signal readout circuitry. The strip comprises an elongated support (preferably flat) adapted for releasable attachment to the readout circuitry; a first conductor and a second conductor each extend along the support and comprise means for connection to the circuitry. An active electrode, positioned to contact the liquid mixture and the first conductor, comprises a single layer deposit of an enzyme capable of catalyzing a reaction involving the compound, a conductive material and an electron mediator, capable of transferring electrons between the enzyme-catalyzed reaction and the first conductor. A reference electrode is positioned to contact the mixture and the second conductor. The system includes circuitry adapted to provide an electrical signal representative of the current. The two-electrode strip is manufactured, e.g., by screen printing an admixture of an enzyme, a conductive material, and a mediator as a single layer onto the substrate.

9 Claims, 6 Drawing Sheets



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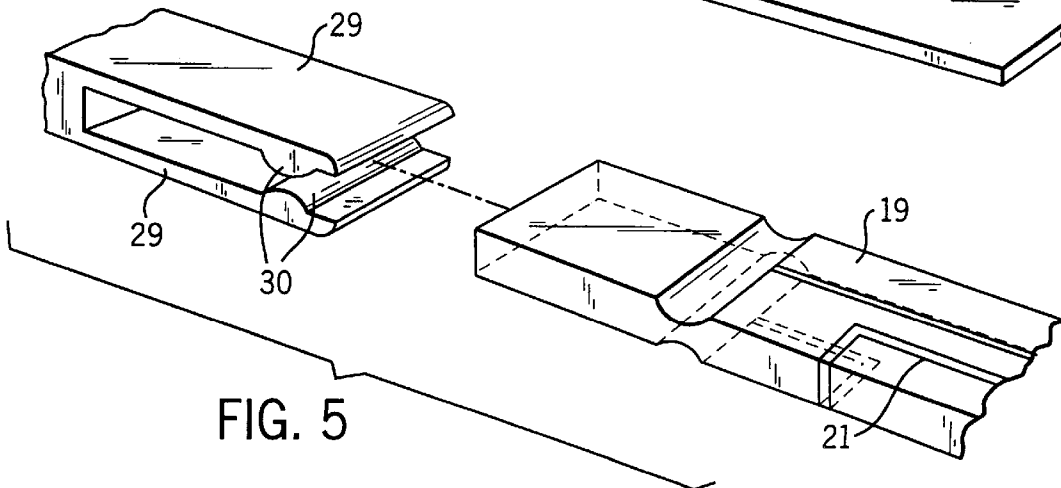
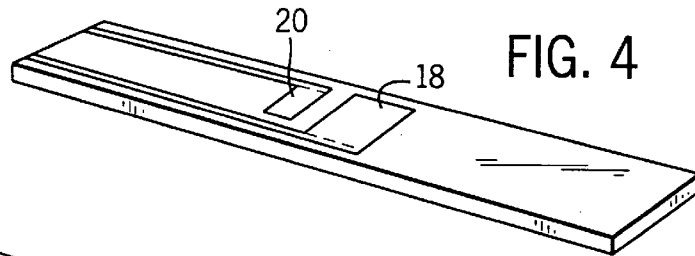
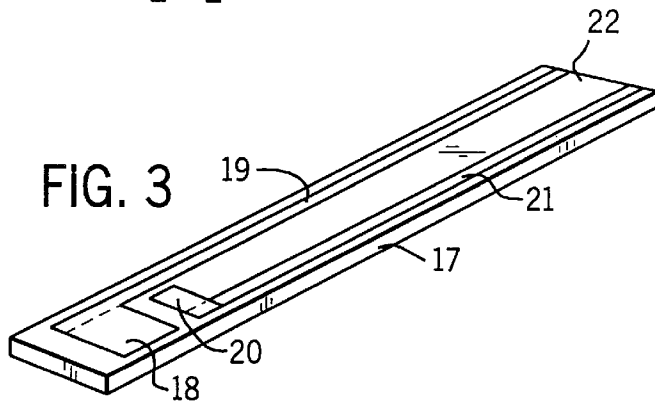
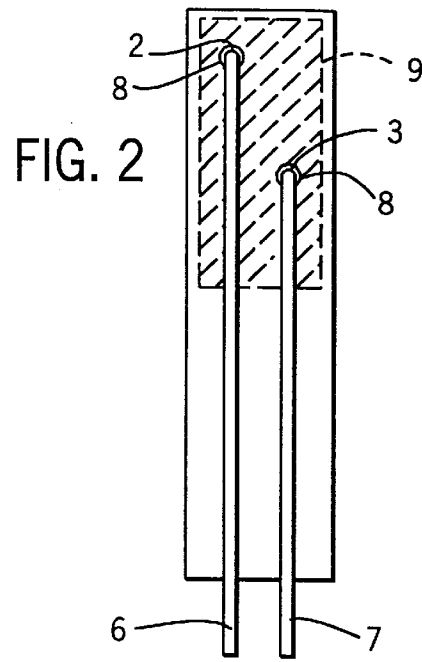
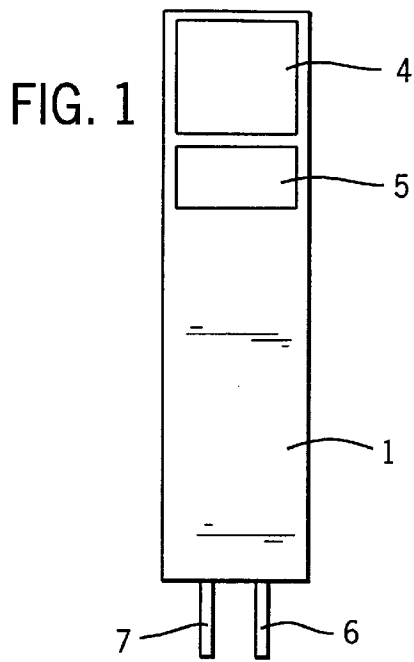
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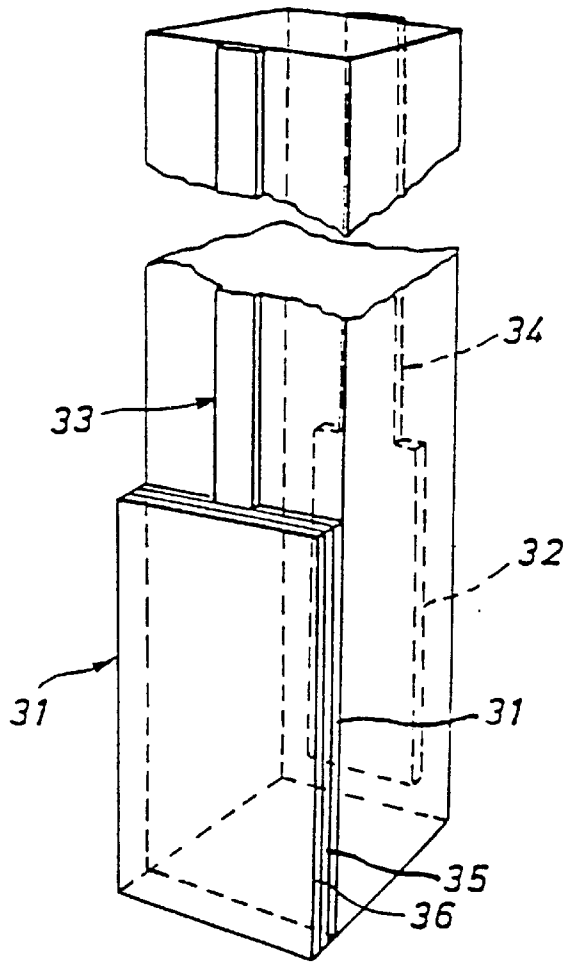


FIG. 6

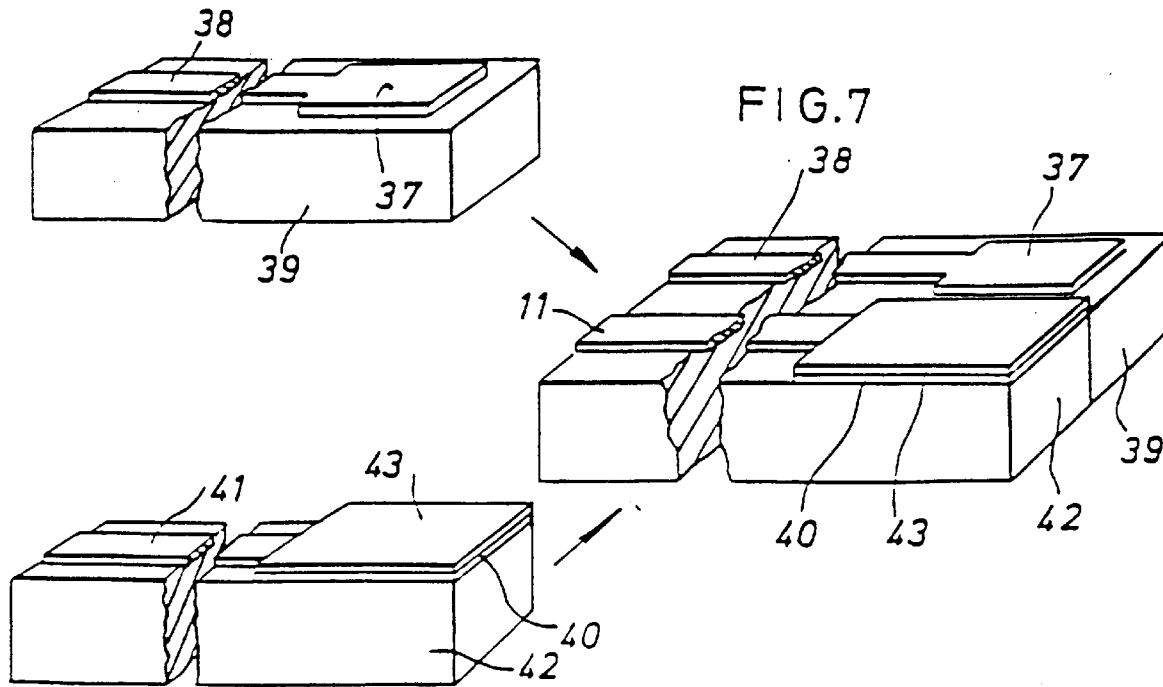
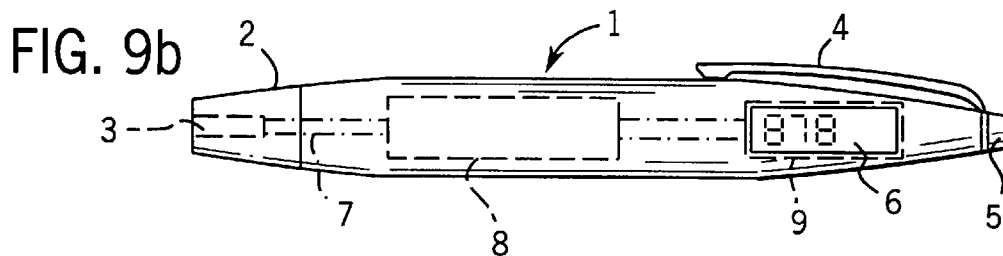
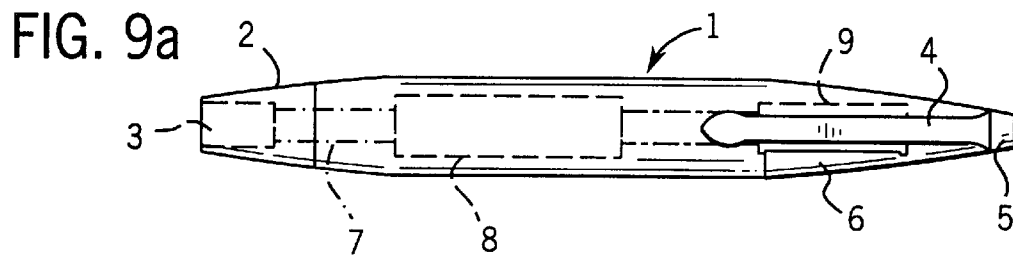
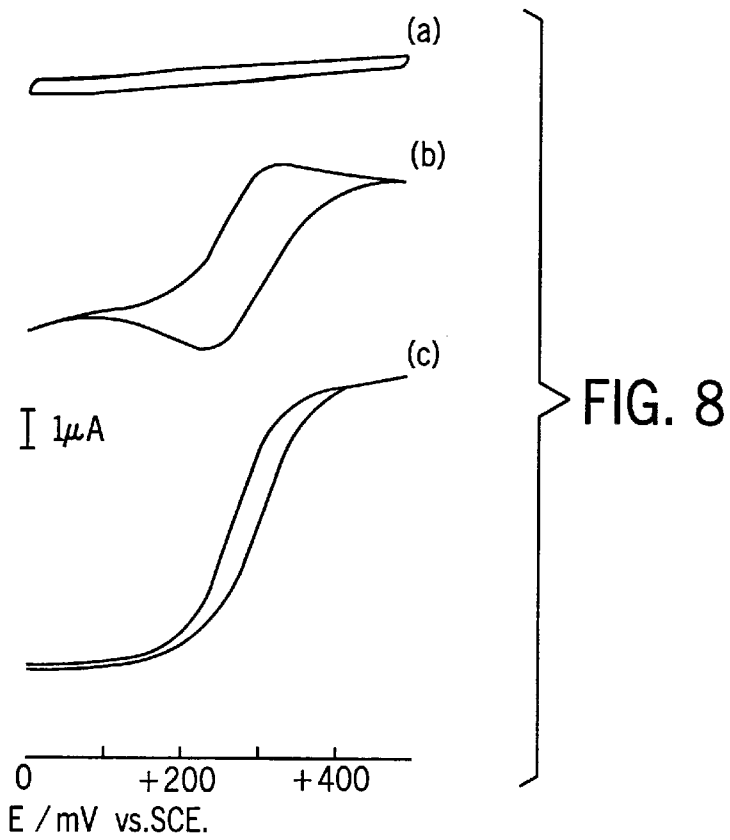


FIG. 7



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