

[54] **BIOSENSOR, AND A METHOD AND A DEVICE FOR QUANTIFYING A SUBSTRATE IN A SAMPLE LIQUID USING THE SAME**

[58] **Field of Search** ..... 204/403, 415, 204/412, 153.12, 406; 435/817, 288, 291

[75] **Inventors:** Shin Ikeda, Katano; Toshihiko Yoshioka, Osaka; Shiro Nankai, Hirakata; Haruhiro Tsutsumi, Ehime-ken; Hideyuki Baba, Matsuyama; Yoshinobu Tokuno, Matsuyama; Syoji Miyazaki, Matsuyama, all of Japan

[56] **References Cited**  
U.S. PATENT DOCUMENTS

4,172,770 10/1979 Semersky et al. .... 204/412  
5,192,415 3/1993 Yoshioka et al. .... 204/403  
5,264,103 11/1993 Yoshioka et al. .... 204/403

*Primary Examiner*—Bruce F. Bell  
*Attorney, Agent, or Firm*—Renner, Otto, Boisselle & Sklar

[73] **Assignee:** Matsushita Electric Industrial Co., Ltd., Osaka, Japan

[57] **ABSTRACT**

The biosensor of this invention can quantify a substrate in a sample liquid by electrochemically measuring the amount of an electron acceptor that has been reduced by electrons generated in a reaction between the substrate and an oxidoreductase. The biosensor has an electrically insulating substrate and an electrode system formed on the substrate including a working electrode, a counter electrode and a third electrode used for detecting a liquid junction. The third electrode can be used merely for detecting a liquid junction, or can be used as both a reference electrode and a liquid junction detecting electrode.

[21] **Appl. No.:** 425,820

[22] **Filed:** Apr. 20, 1995

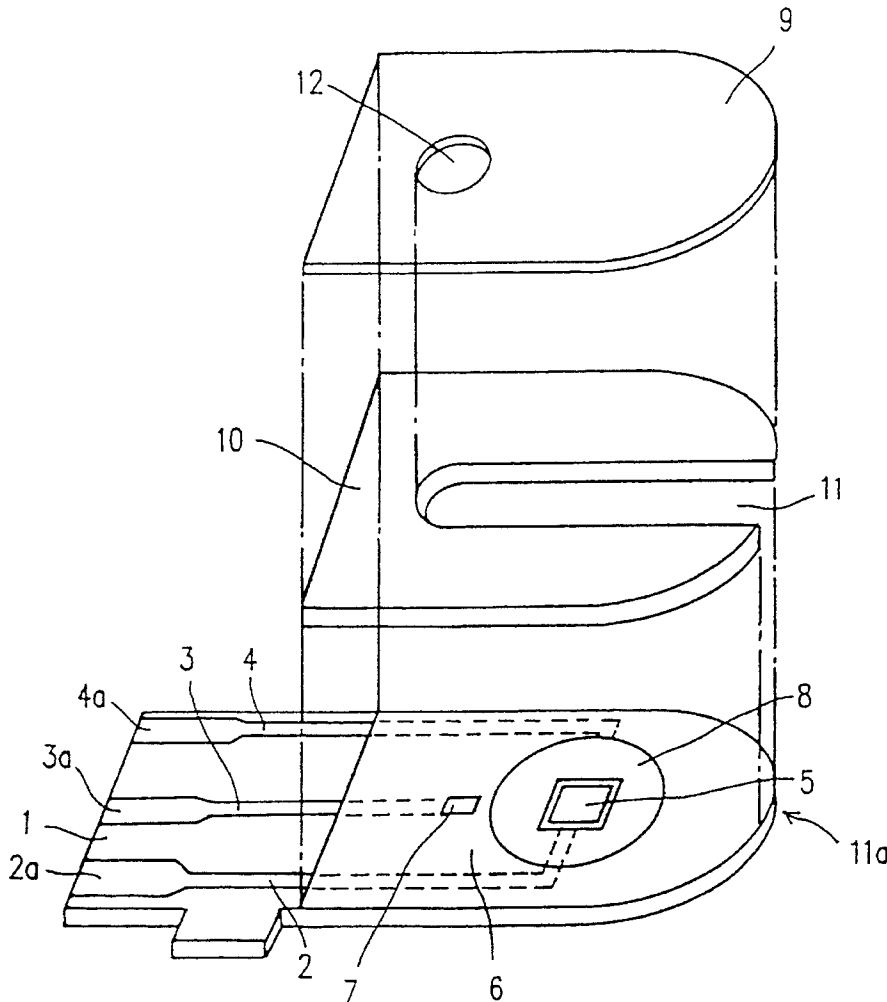
[30] **Foreign Application Priority Data**

Mar. 17, 1995 [JP] Japan ..... 7-058939

[51] **Int. Cl.<sup>6</sup>** ..... G01N 27/26

[52] **U.S. Cl.** ..... 204/403; 204/415; 204/412; 204/406; 435/817; 435/287.9; 205/778; 205/777.5

16 Claims, 4 Drawing Sheets



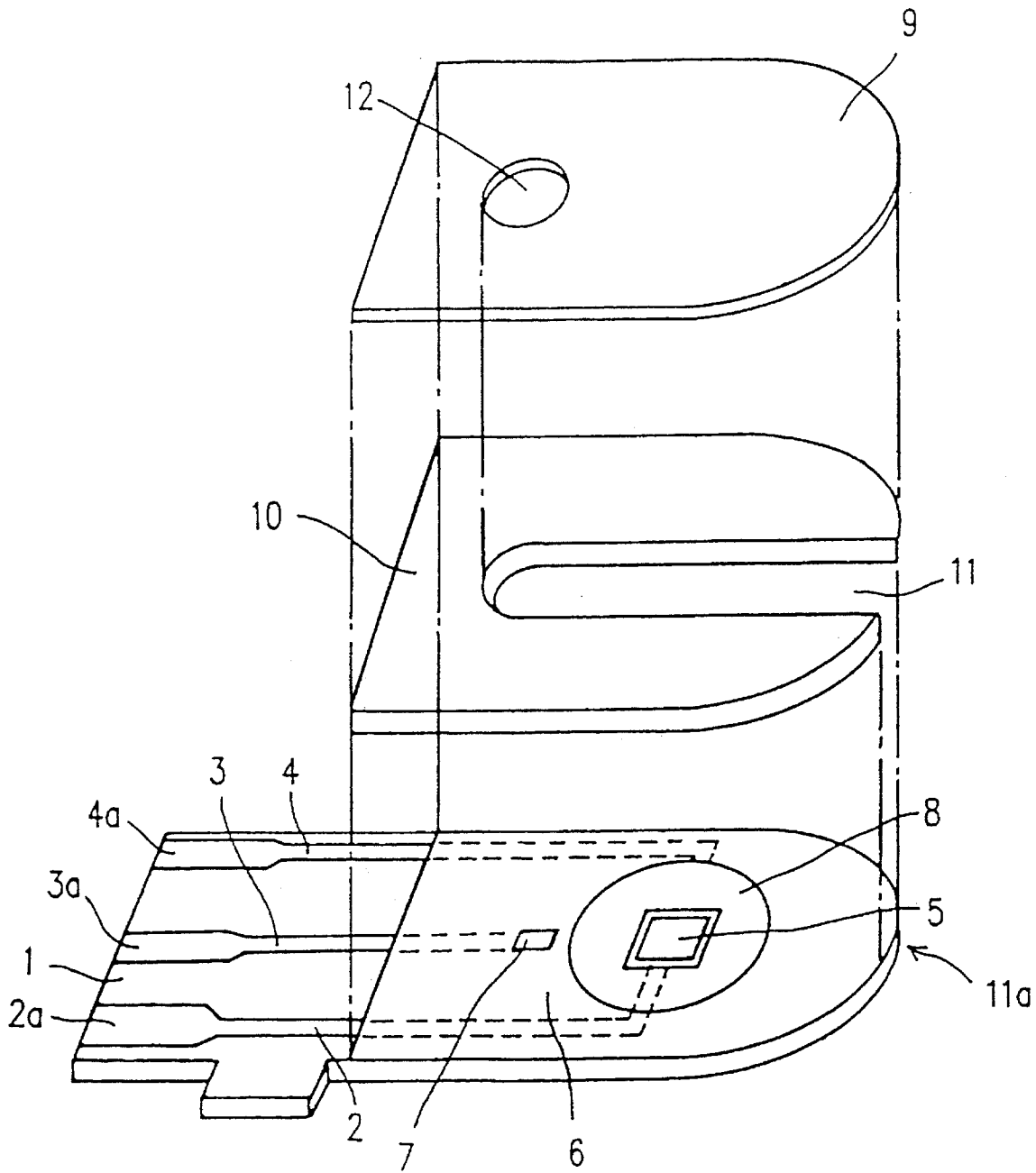


FIG. 1

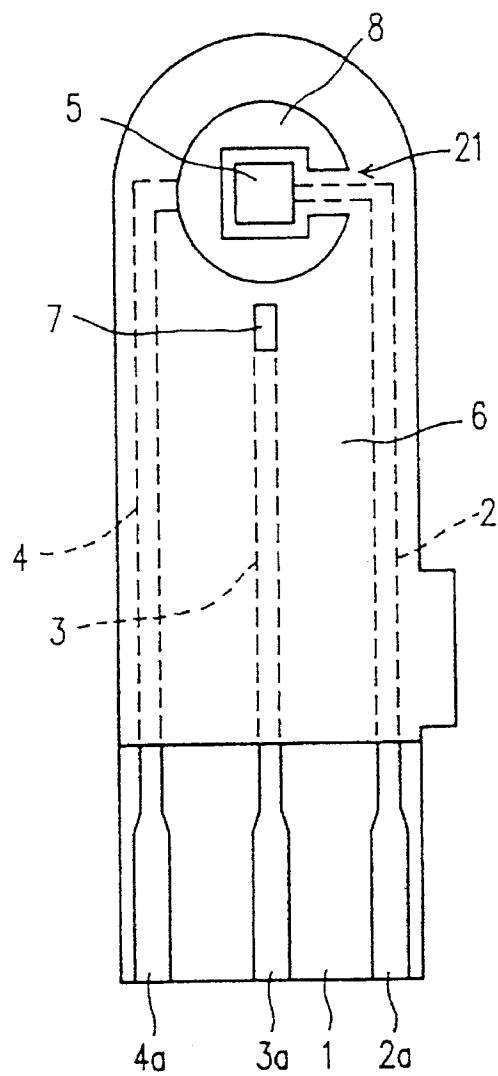


FIG. 2

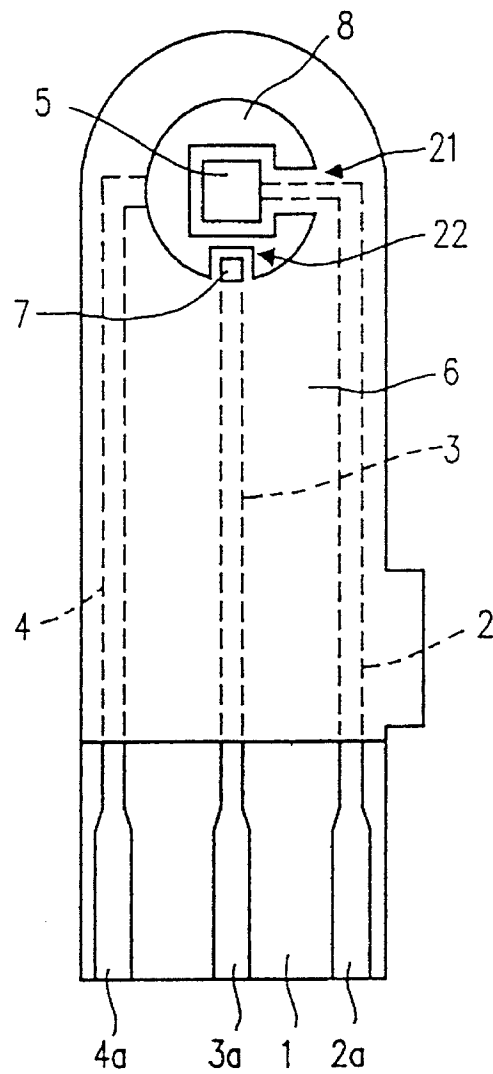


FIG. 4

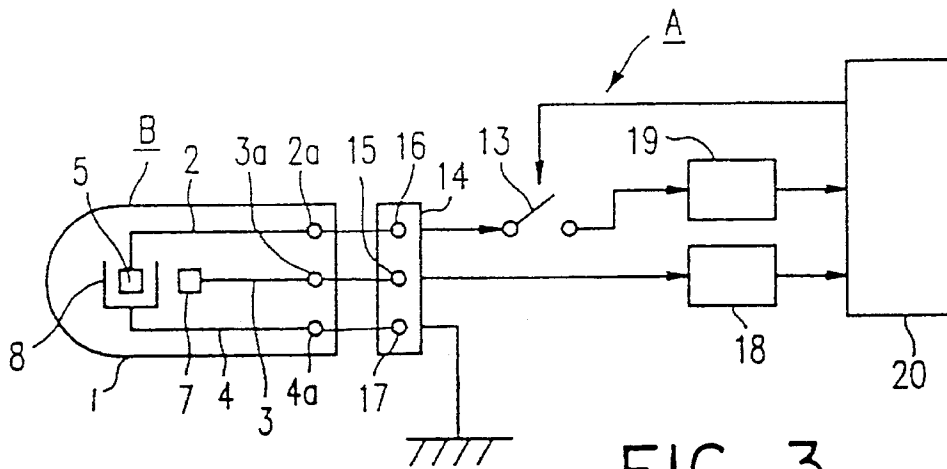


FIG. 3

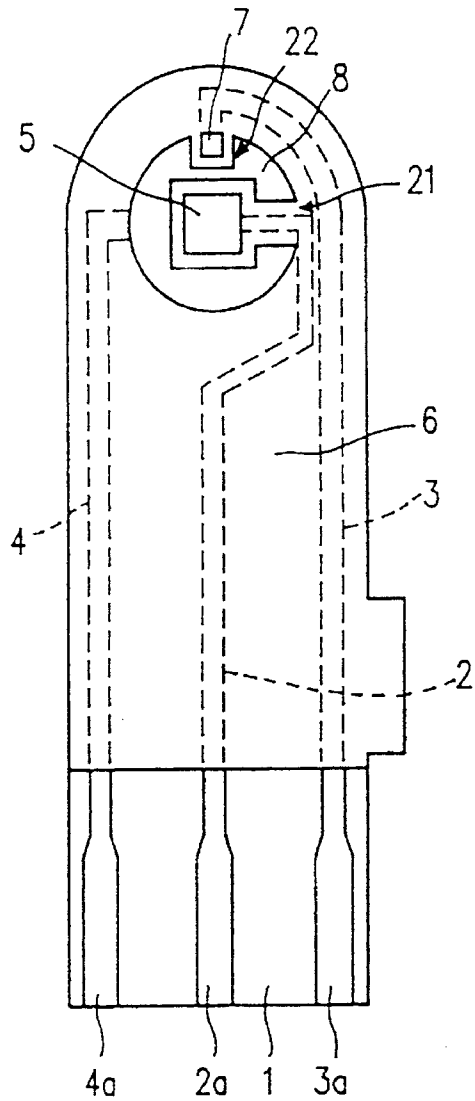


FIG. 5

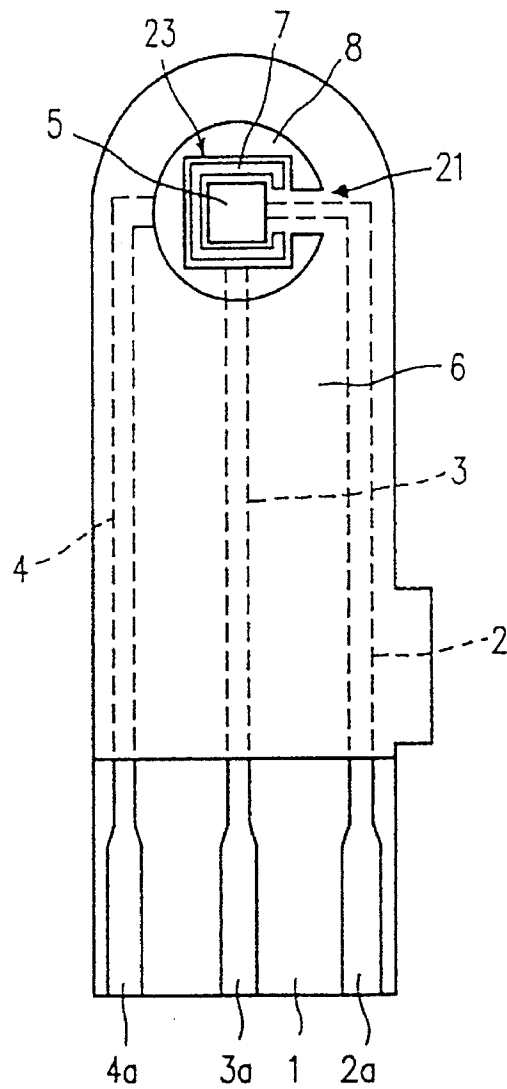


FIG. 6

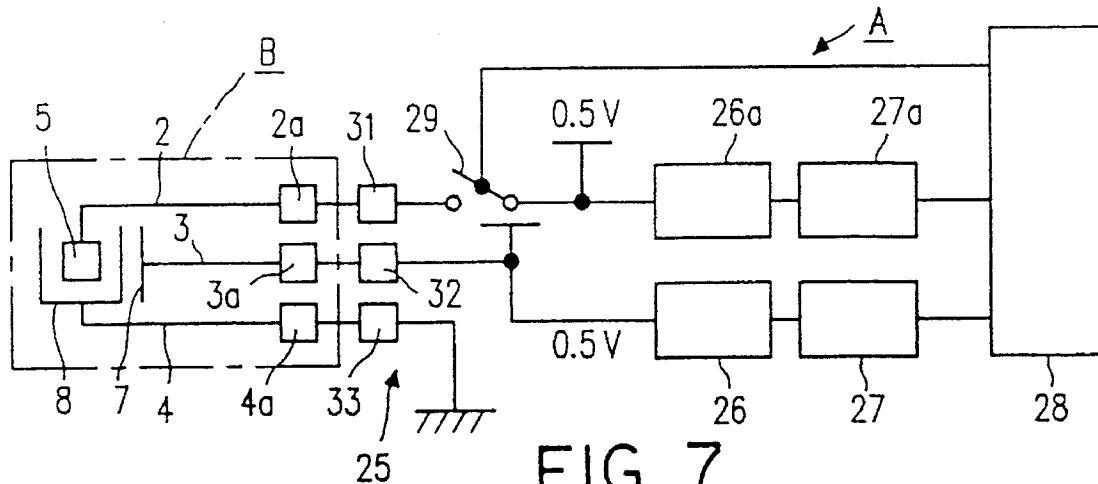


FIG. 7

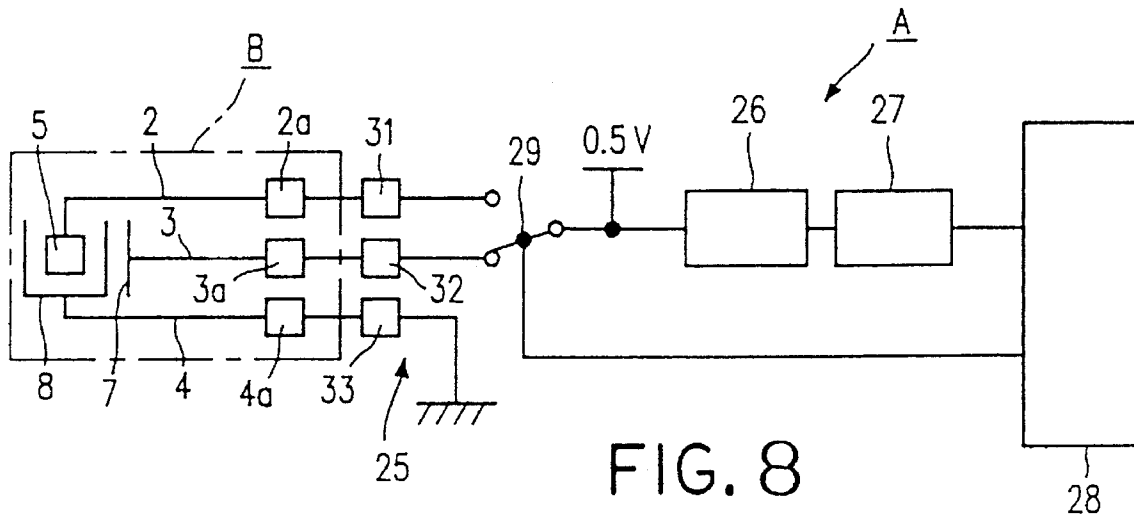


FIG. 8

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