



US005797841A

United States Patent [19]

Delonzor et al.

[11] **Patent Number:** **5,797,841**[45] **Date of Patent:** **Aug. 25, 1998**[54] **SHUNT BARRIER IN PULSE OXIMETER SENSOR**[75] **Inventors:** Russ Delonzor, Union City; Paul D. Mannheimer, Danville; Michael E. Fein, Mountain View; Don Hannula, San Luis Obispo, all of Calif.[73] **Assignee:** Nellcor Puritan Bennett Incorporated, Pleasanton, Calif.[21] **Appl. No.:** 611,151[22] **Filed:** Mar. 5, 1996[51] **Int. Cl.⁶** A61B 5/00[52] **U.S. Cl.** 600/323; 600/322; 600/344; 600/310; 250/221[58] **Field of Search** 128/633, 664-7; 356/39-41; 250/227.11, 200, 221; 600/310, 322, 323, 326, 344[56] **References Cited****U.S. PATENT DOCUMENTS**

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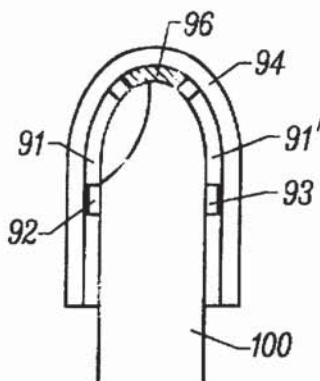
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Primary Examiner—Jennifer Bahr*Assistant Examiner*—Bryan K. Yarnell*Attorney, Agent, or Firm*—Townsend and Townsend and Crew LLP[57] **ABSTRACT**

A pulse oximeter sensor having an emitter(s) and a detector, with a layer having a first portion over the emitter and a second portion of layer over the detector is provided. A barrier is included between the first and second portions of the overlying layer to substantially block radiation of the wavelengths emitted by the emitter(s). Preferably, the barrier reduces the radiation shunted to less than 10% of the radiation detected, and more preferably to less than 1% of the radiation detected.

9 Claims, 6 Drawing Sheets

Apple Inc

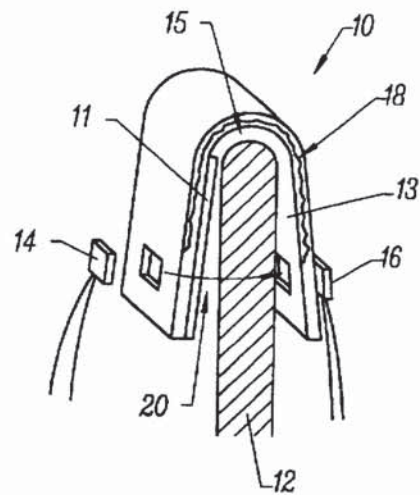


FIG. 1
PRIOR ART

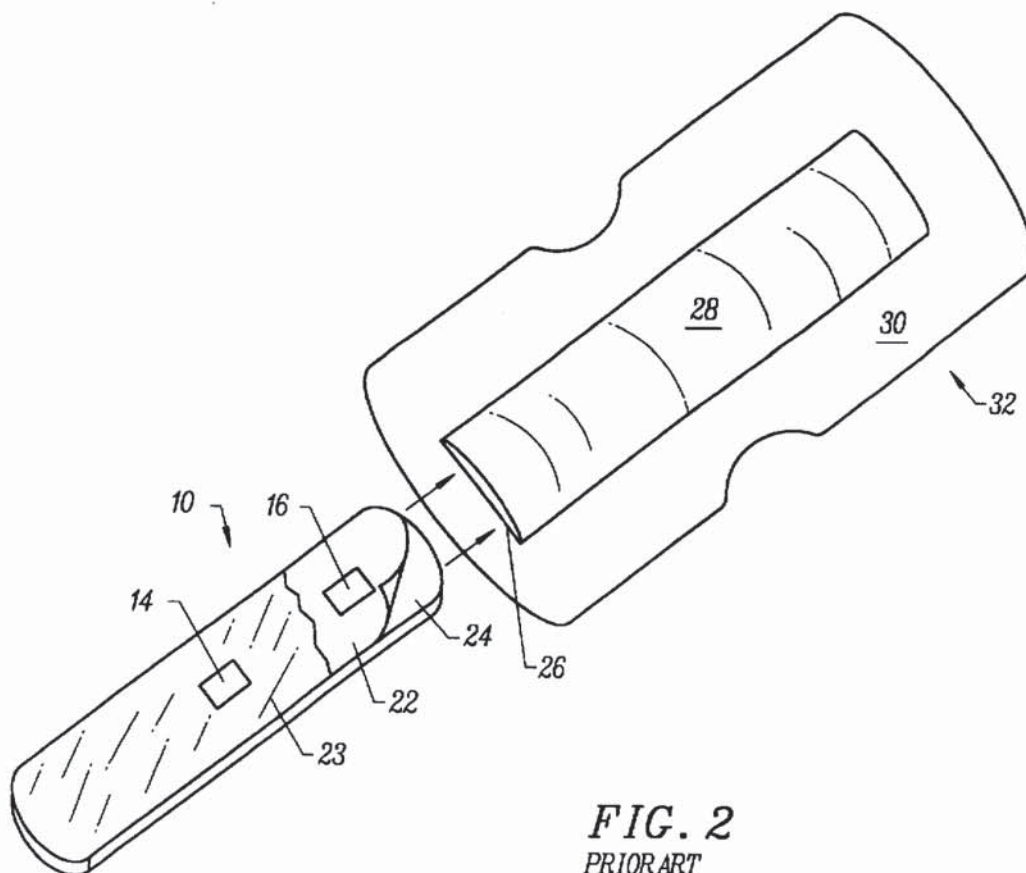


FIG. 2
PRIOR ART

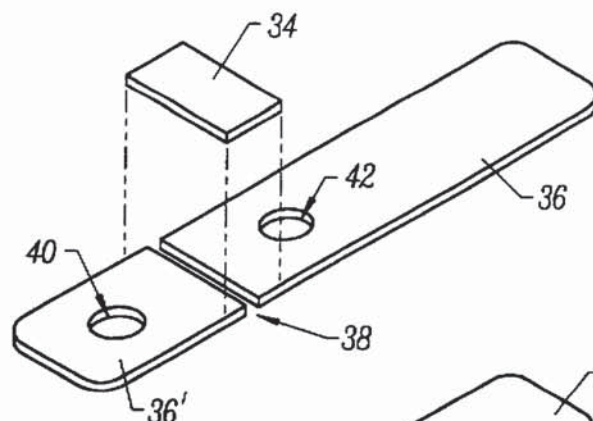


FIG. 3A

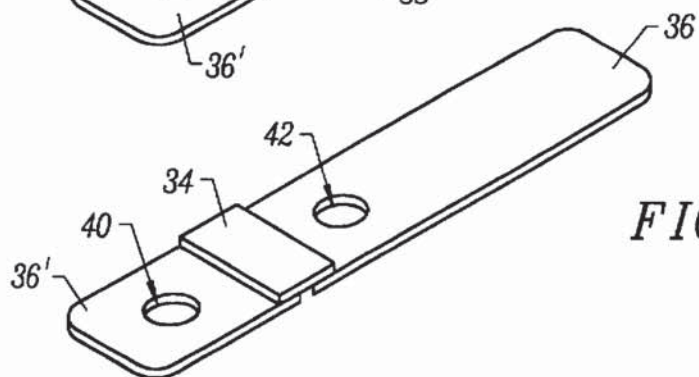


FIG. 3B

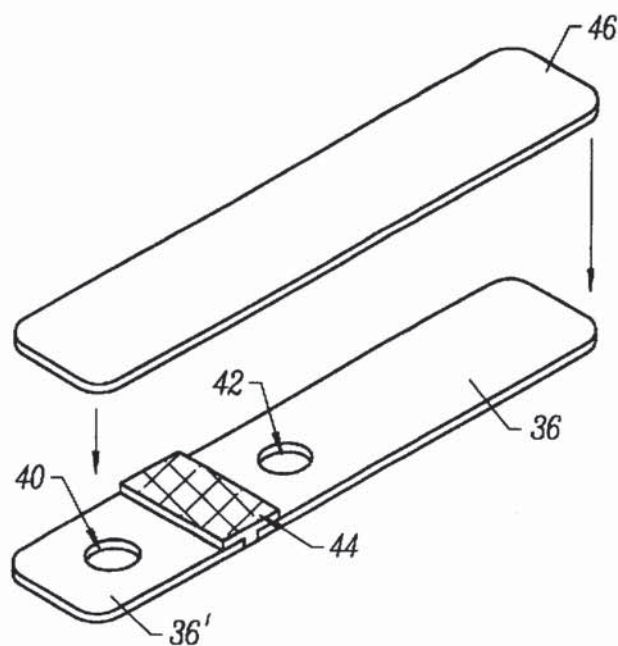


FIG. 4

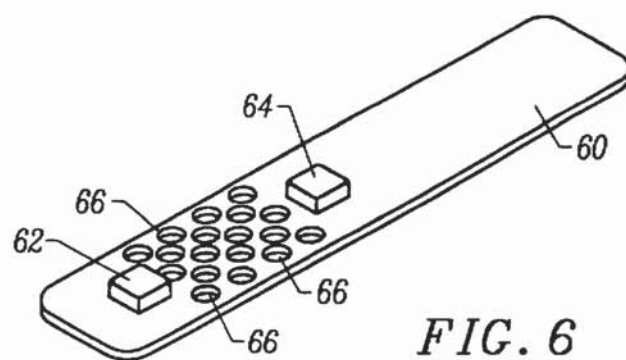
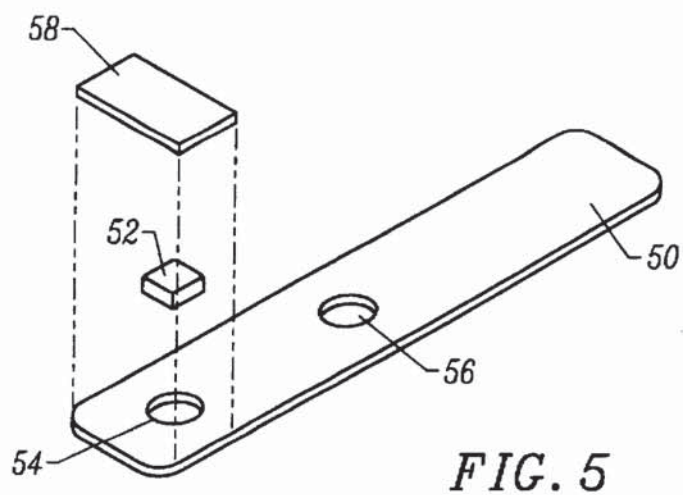


FIG. 7

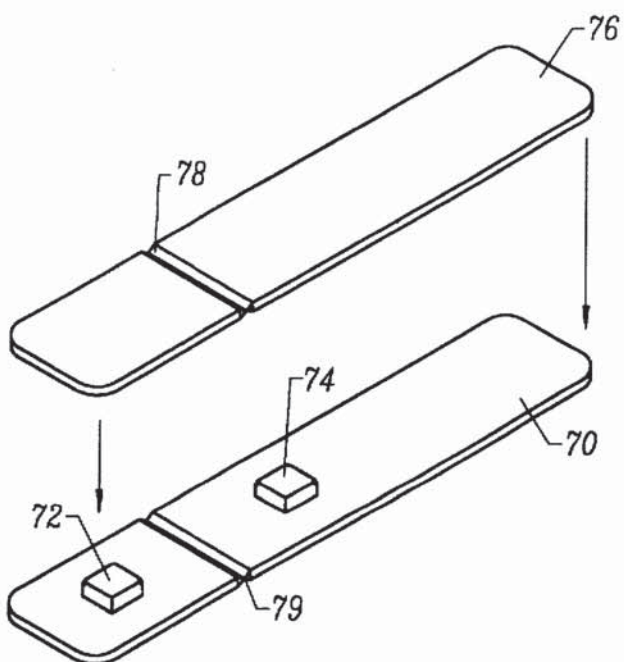
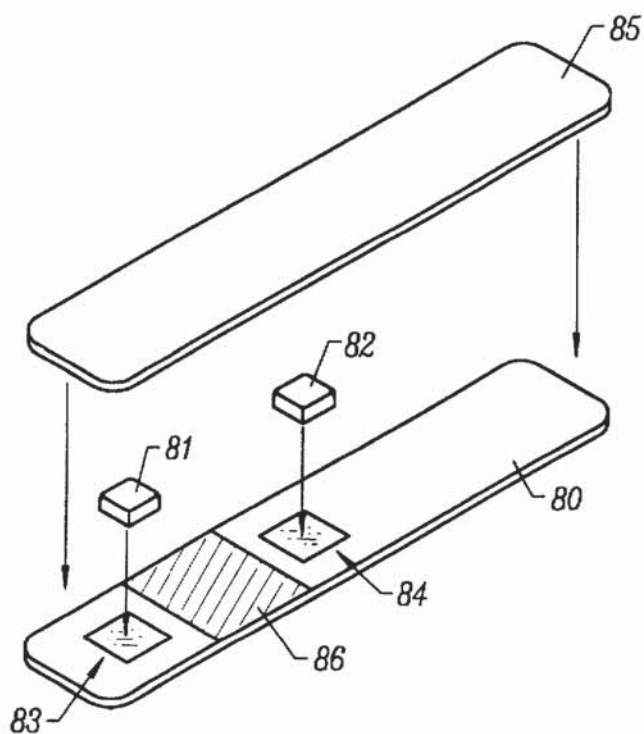


FIG. 8



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