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United States Patent [19]
Scharf

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- [54] **GREEN LIGHT PULSE OXIMETER**
- [75] Inventor: **John Edward Scharf**, Oldsmar, Fla.
- [73] Assignee: **University of South Florida**, Tampa, Fla.
- [21] Appl. No.: **749,898**
- [22] Filed: **Nov. 18, 1996**
- [51] Int. Cl.⁶ **A61B 5/00**
- [52] U.S. Cl. **600/323**
- [58] Field of Search 600/310, 322, 600/323, 324, 326, 330, 476; 356/41

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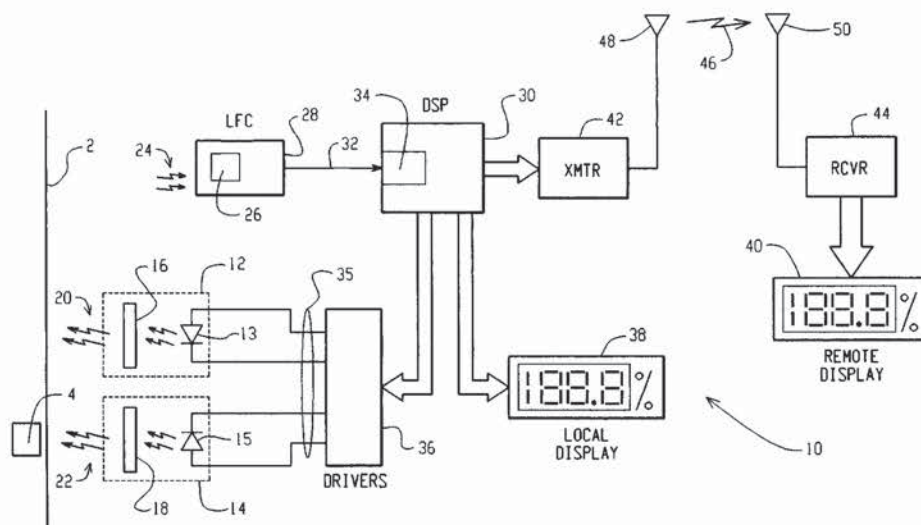
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Primary Examiner—Robert L. Nasser
Assistant Examiner—Eric F. Winakur
Attorney, Agent, or Firm—Sean T. Moorhead; Calfee, Halter & Griswold LLP

[57] **ABSTRACT**

A reflectance pulse oximeter that determines oxygen saturation of hemoglobin using two sources of electromagnetic radiation in the green optical region, which provides the maximum reflectance pulsation spectrum. The use of green light allows placement of an oximetry probe at central body sites (e.g., wrist, thigh, abdomen, forehead, scalp, and back). Preferably, the two green light sources alternately emit light at 560 nm and 577 nm, respectively, which gives the biggest difference in hemoglobin extinction coefficients between deoxyhemoglobin, RHB, and oxyhemoglobin, HbO₂.

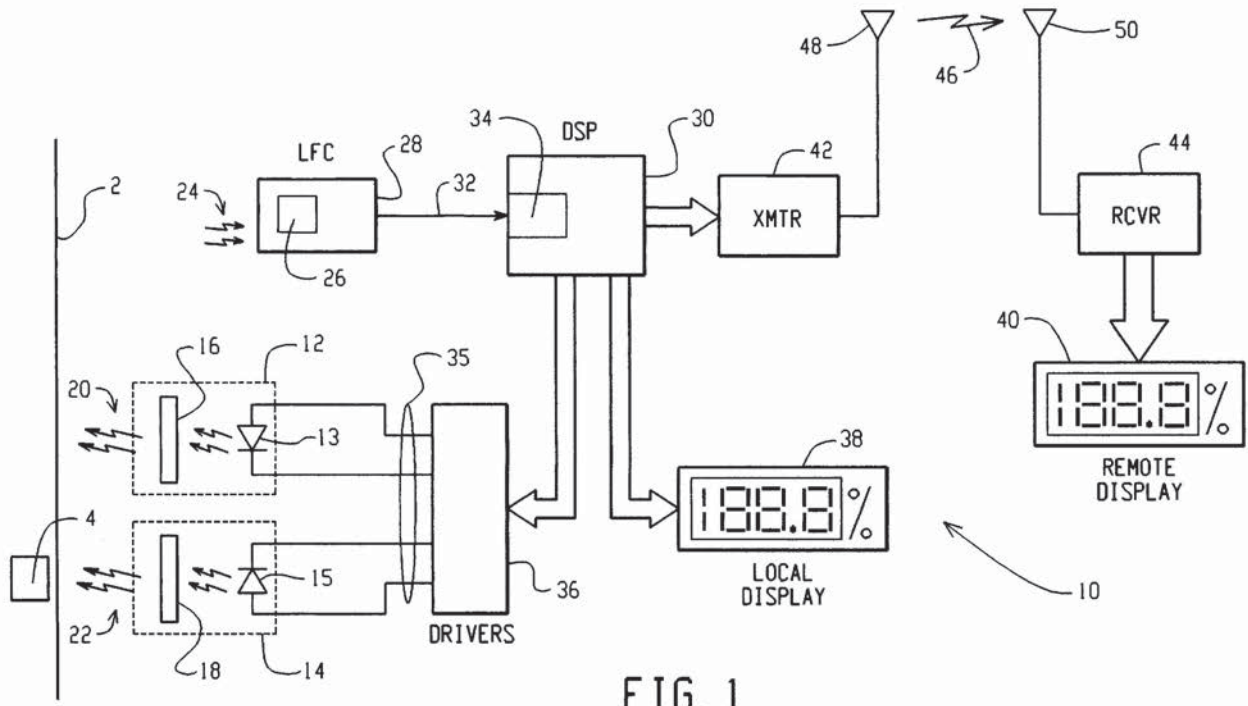
41 Claims, 7 Drawing Sheets



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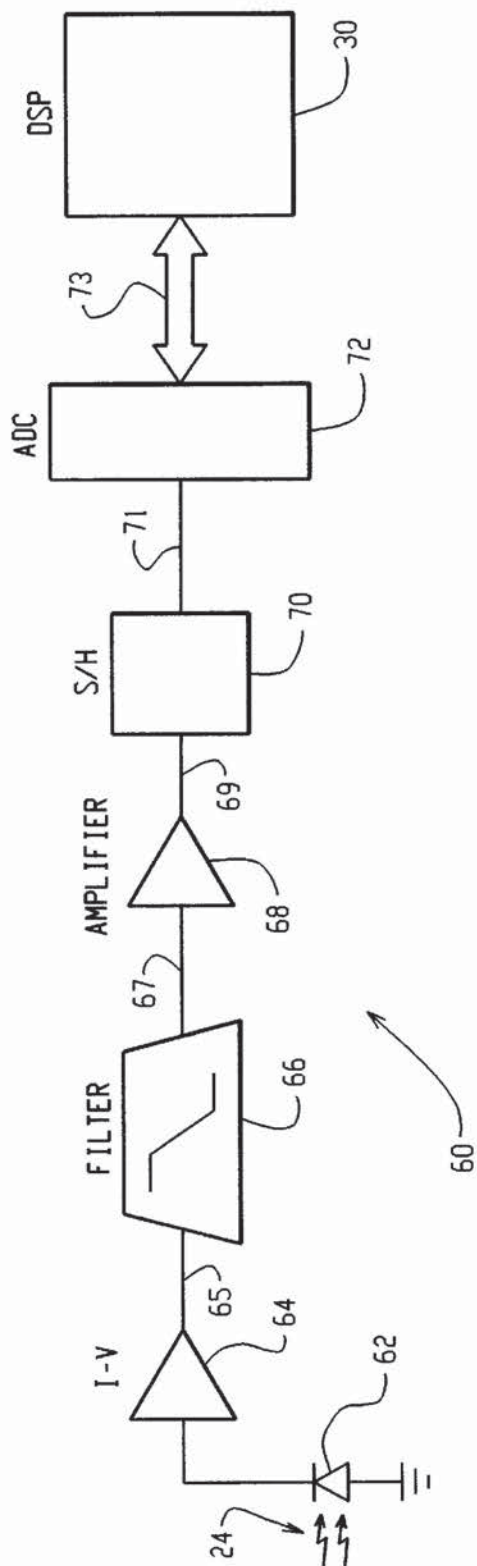
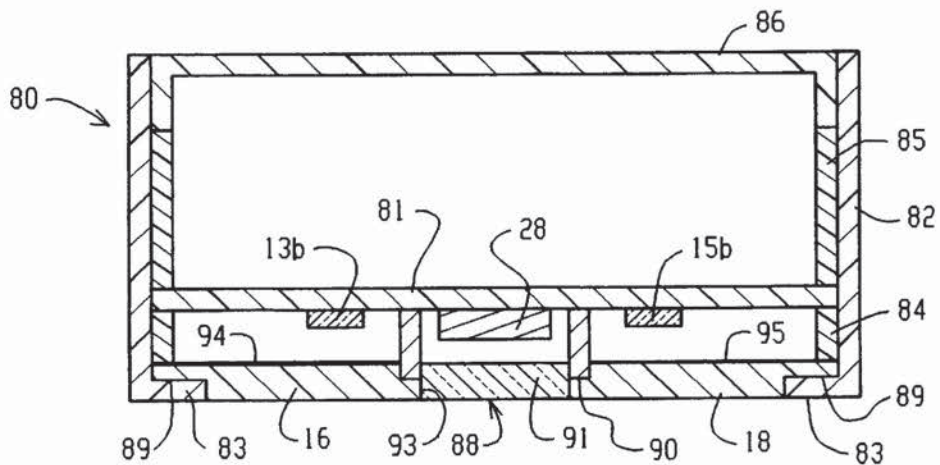
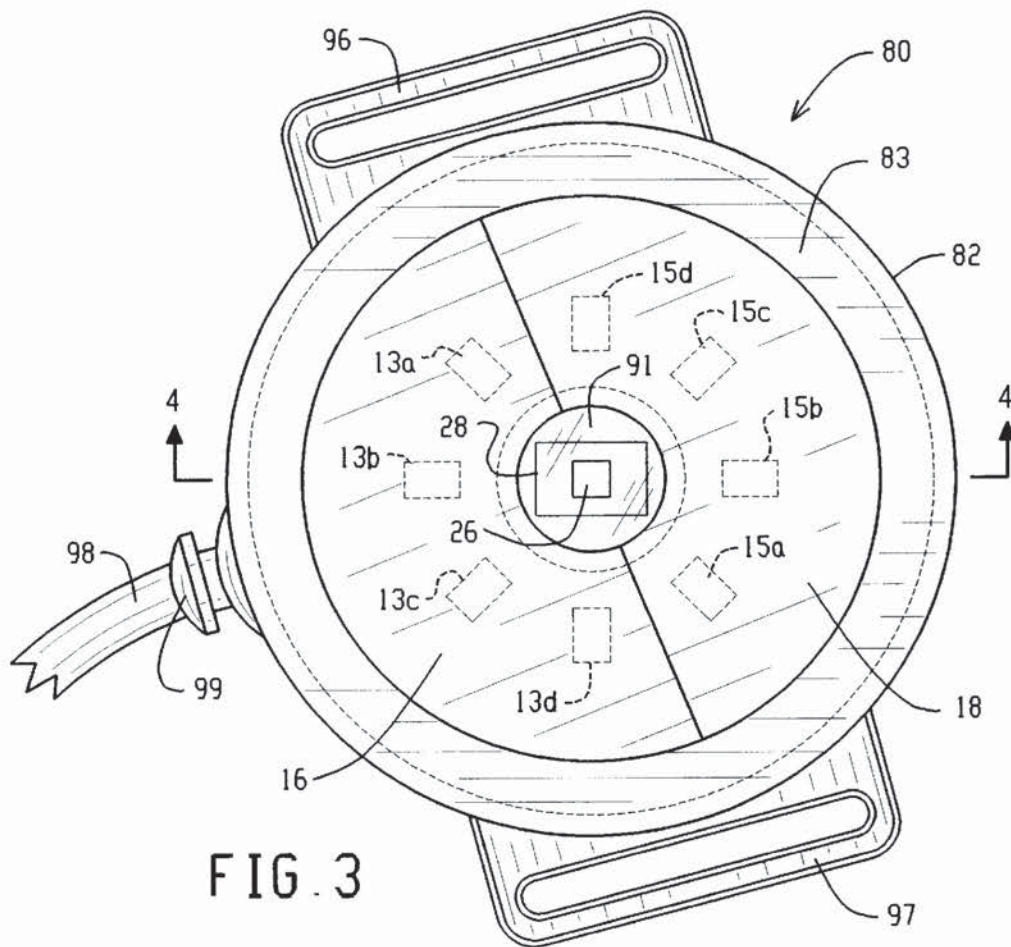


FIG. 2



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