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(12) **United States Patent**  
**Van Hoy et al.**

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(54) **PHOTOPLETHYSMOGRAPHIC DEVICE WITH REMOTE FACSIMILE**

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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.

(57) **ABSTRACT**

(21) Appl. No.: **09/386,691**

(22) Filed: **Aug. 30, 1999**

(Under 37 CFR 1.47)

**Related U.S. Application Data**

(63) Continuation-in-part of application No. 08/938,224, filed on Sep. 26, 1997, now abandoned.

(51) **Int. Cl.<sup>7</sup>** ..... **A61B 5/00**

(52) **U.S. Cl.** ..... **600/323; 600/333; 128/904**

(58) **Field of Search** ..... 600/300, 301, 600/310, 322, 323, 324, 333; 128/903, 904

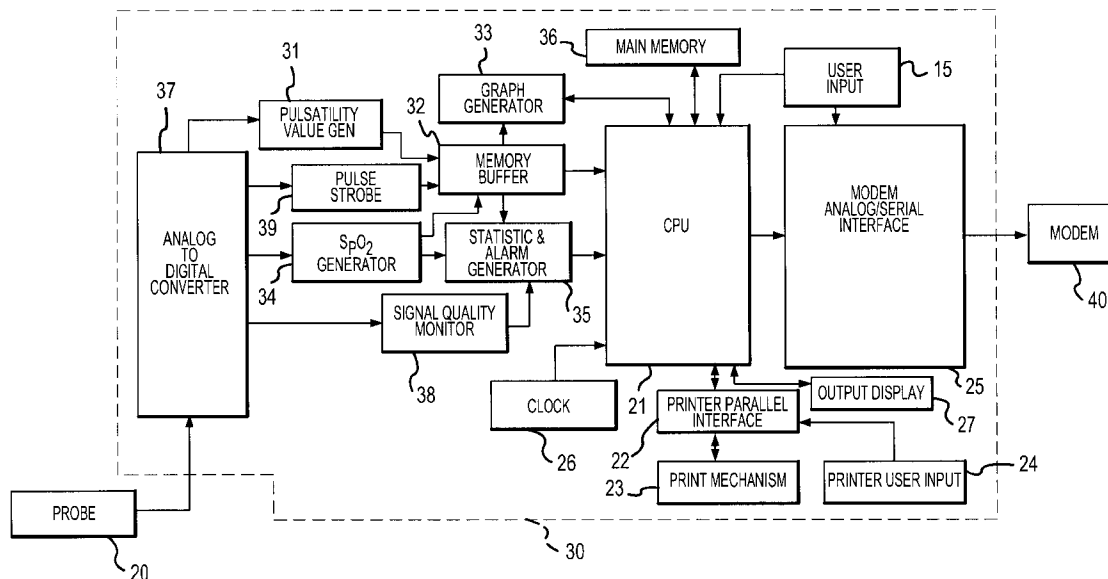
A photoplethysmographic monitoring system such as a pulse oximeter collects data regarding the blood analyte concentration and pulse rate of a patient through the analysis of light transmitted from an emitter through tissue to a photo detector. It is often necessary to review the collected data, such as oxygen saturation, pulse rate and pulsatility value at a location remote to the patient being monitored. The photoplethysmographic system formats the selected data for transmittal to a remote facsimile machine via standard telephone communication systems using an internal or external modem. The formatter is able to function within the processing and memory constraints of pulse oximeters by formatting and transmitting the data in sections. Formatted data may be sent via hard-wired telephone, cellular phone, PCS digital telephones or through satellite communication systems enabling transmittal of data from a portable photoplethysmographic system.

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**19 Claims, 20 Drawing Sheets**



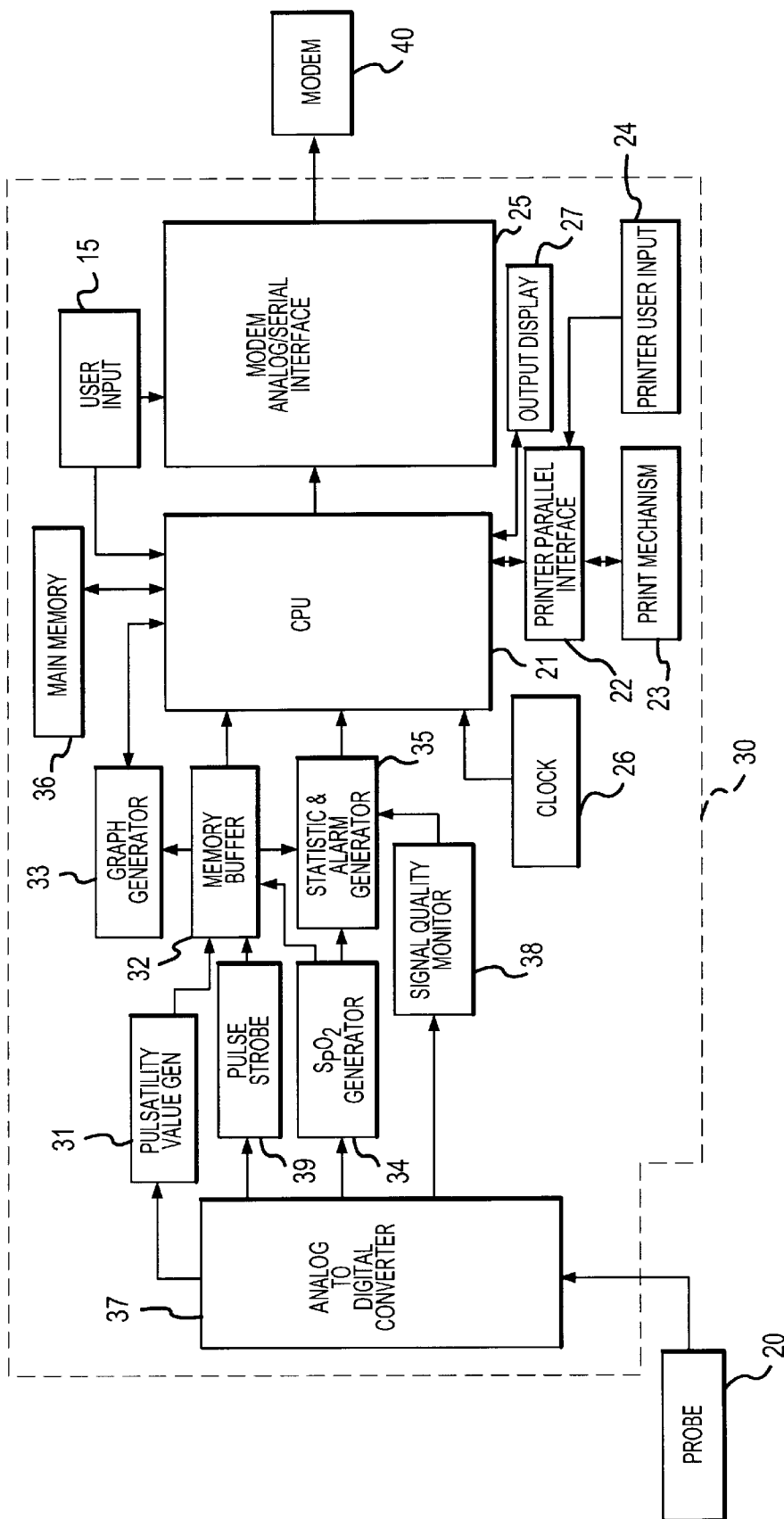


FIG.1

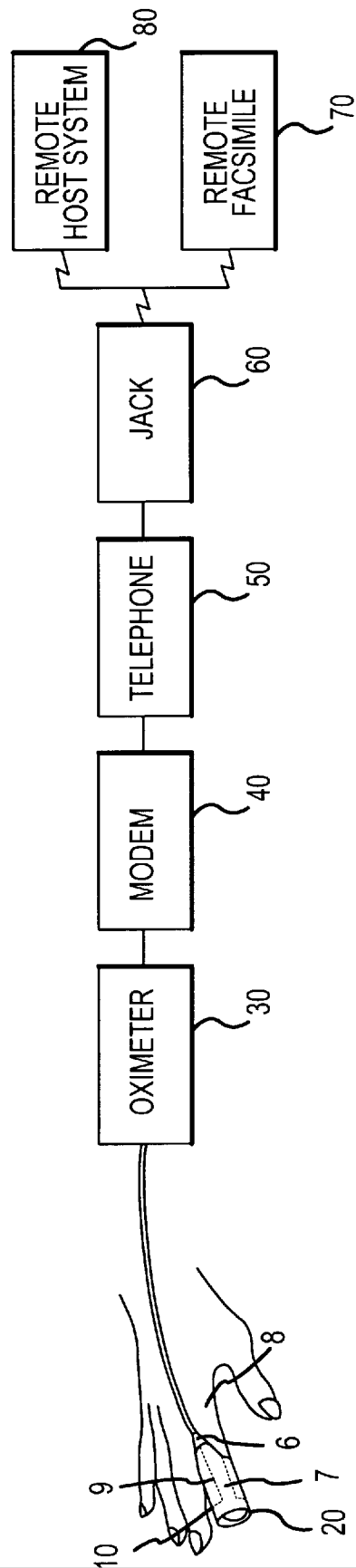


FIG. 2

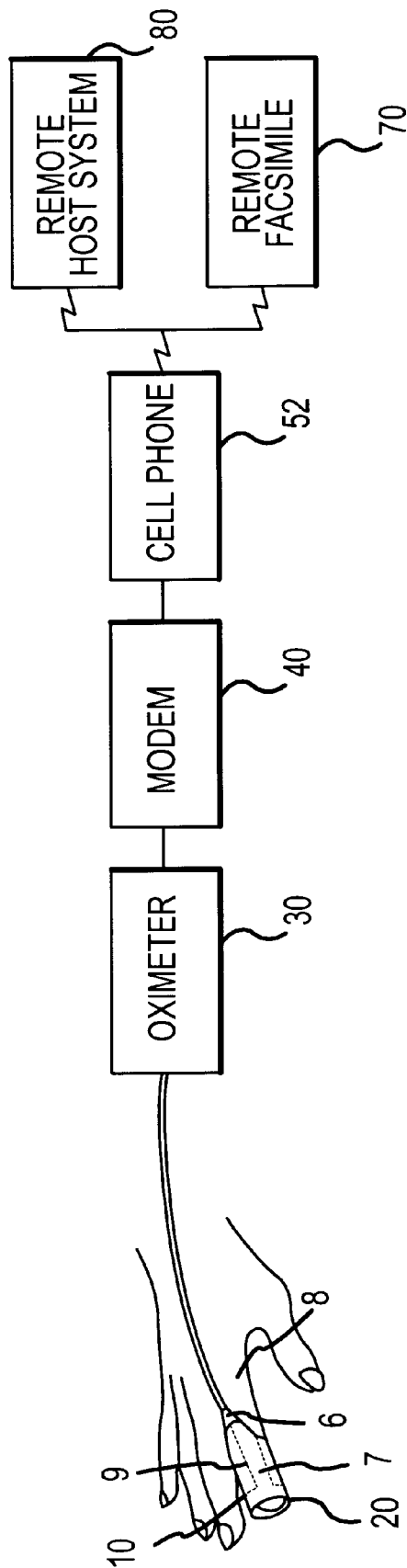


FIG.3

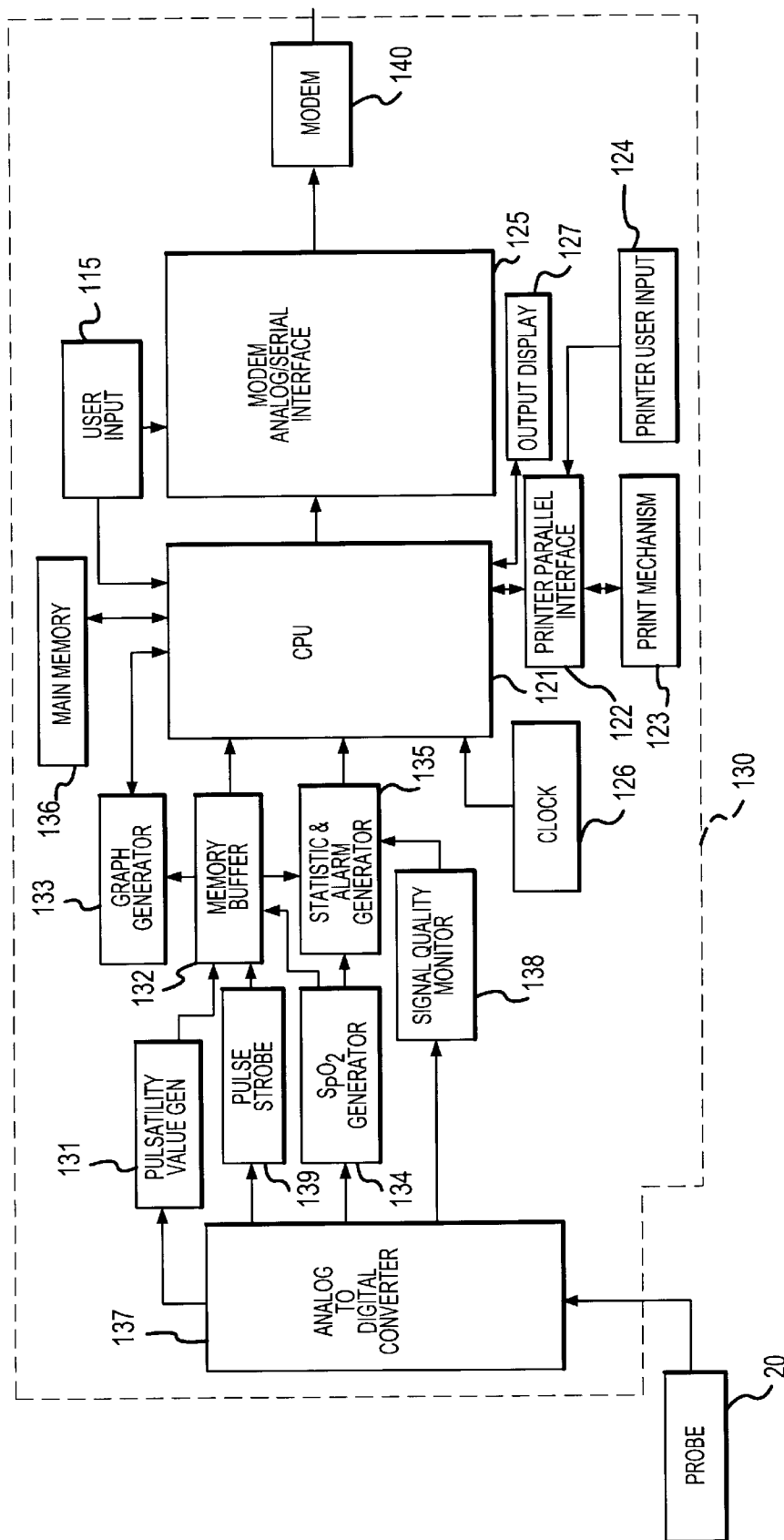


FIG. 4

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