



US005099842A

United States Patent [19]
Mannheimer et al.

[11] **Patent Number:** **5,099,842**
[45] **Date of Patent:** **Mar. 31, 1992**

- [54] **PERINATAL PULSE OXIMETRY PROBE**
- [75] **Inventors:** Paul D. Mannheimer, Belmont; Carl Ritson, San Jose, both of Calif.
- [73] **Assignee:** Nellcor Incorporated, Hayward, Calif.
- [21] **Appl. No.:** 504,235
- [22] **Filed:** Apr. 4, 1990

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Primary Examiner—Ruth S. Smith
Attorney, Agent, or Firm—Townsend and Townsend

Related U.S. Application Data

- [63] Continuation-in-part of Ser. No. 264,196, Oct. 28, 1988, Pat. No. 4,938,218.
- [51] **Int. Cl.⁵** **A61B 5/00**
- [52] **U.S. Cl.** **128/633**
- [58] **Field of Search** 128/633-634,
128/643, 664-666; 356/40, 41

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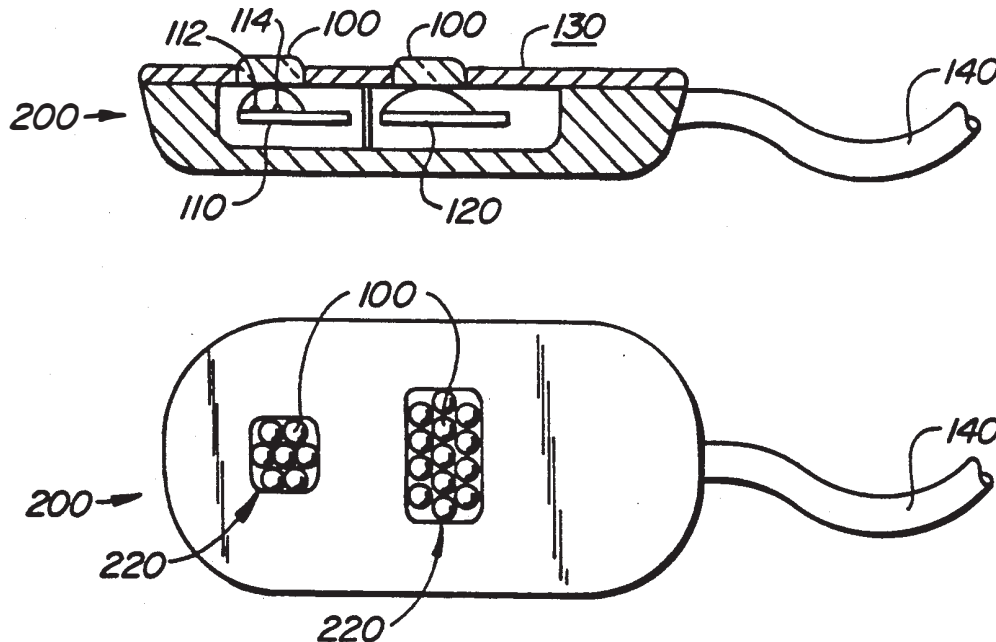
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[57] **ABSTRACT**

A fetal pulse oximetry probe has clusters of light-transmissive bumps over the light source and the light detector on the surface of the probe. The probe is usually attached to the fetus' head. The clusters part the fetal hair and penetrate other light-attenuating organic materials on the head. The clusters thus transmit a more intense light signal. To reduce the amount of signal shunting between them, the clusters also may be separated by additional opaque (light-shielding) bumps.

12 Claims, 4 Drawing Sheets



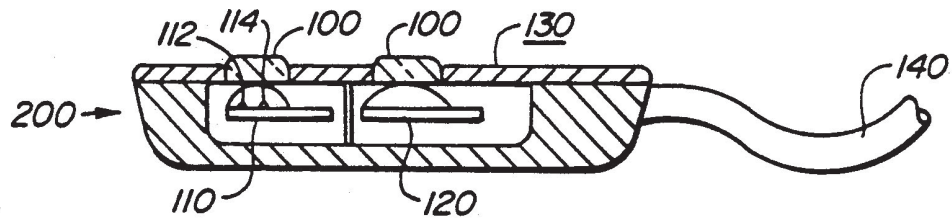


FIG. 1a.

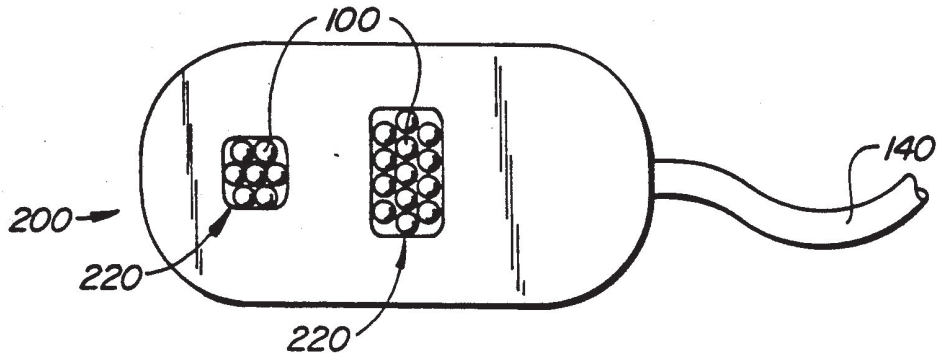


FIG. 1b.

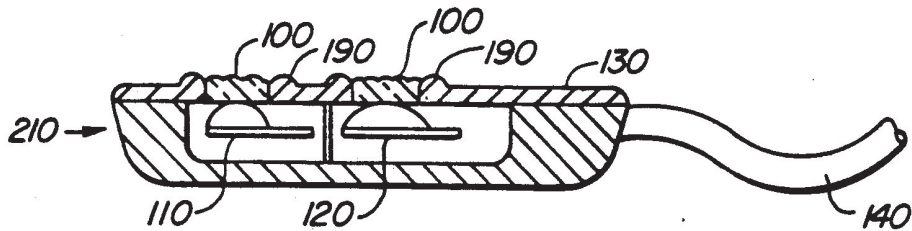


FIG. 3a.

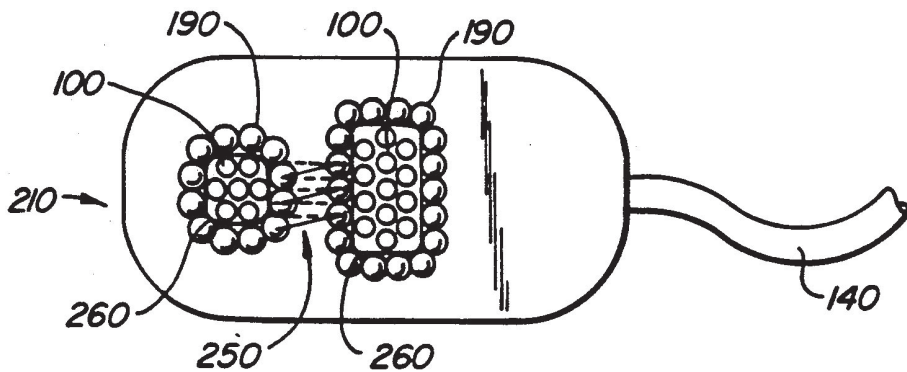


FIG. 3b.

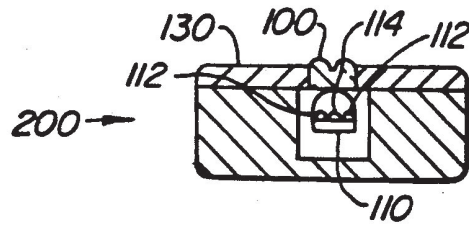


FIG. 1c.

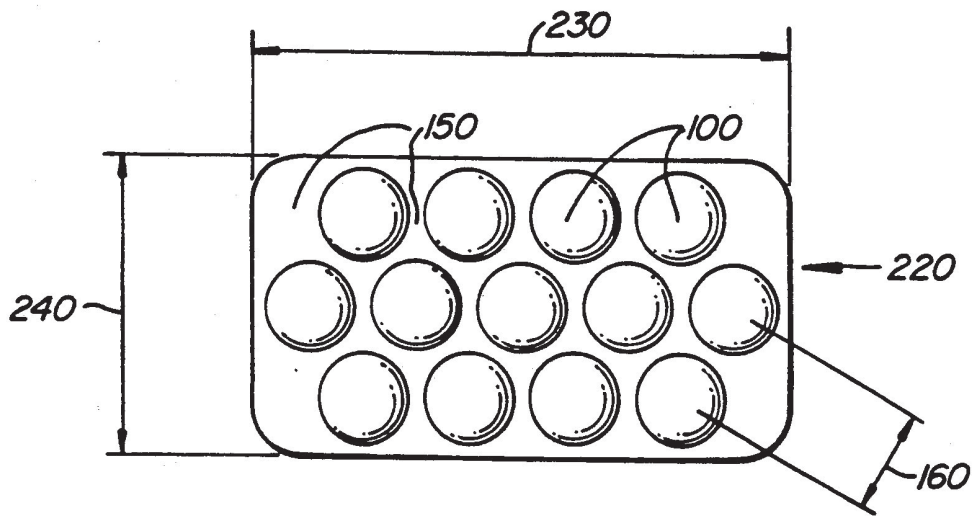


FIG. 2a.

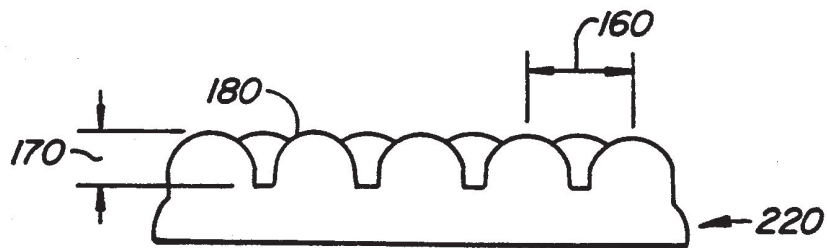


FIG. 2b.

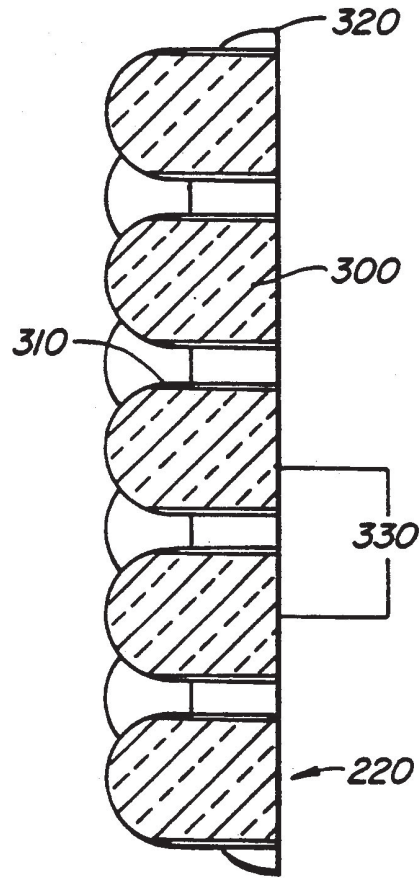


FIG. 4.

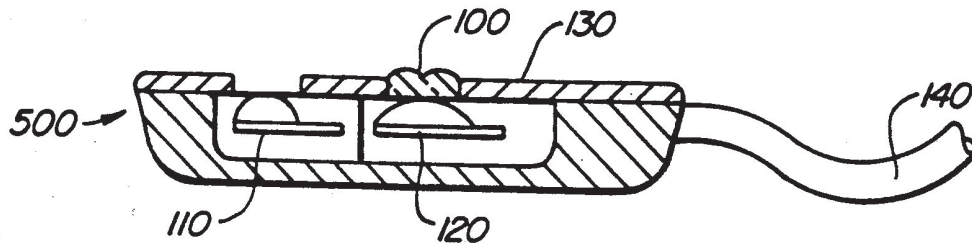


FIG. 5a.

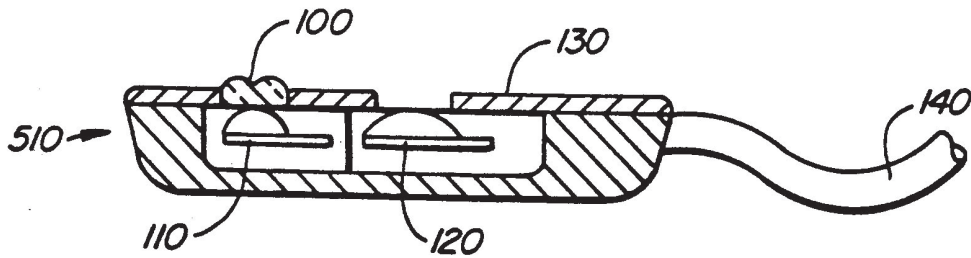


FIG. 5b.

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