

[54] **DOUBLE SPIRAL ELECTRODE FOR INTRA-CAVITY ATTACHMENT**

[75] Inventor: **Helge Ruttgers, Heidelberg, Germany**

[73] Assignee: **Hewlett-Packard GmbH, Boblinger, Germany**

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[56] **References Cited**

UNITED STATES PATENTS

3,580,242 5/1971 LaCroix 128/2.06 E

3,472,234	10/1969	Tachiek	128/418
3,087,486	4/1963	Kilpatrick	128/418
3,533,403	10/1970	Woodson	128/2.06 E
3,474,791	10/1969	Bentov	128/418
3,120,227	2/1964	Hunter, Jr. et al.	128/2.06 E

Primary Examiner—William E. Kamm
Attorney—Stephen P. Fox

[57] **ABSTRACT**

An electrode device is configured for mounting at or within parts of the human body, especially for obtaining ECG signals from a fetus. The electrode device includes two spiral pointed catcher elements displaced by 180° which are mounted in an insulating carrier. A counter electrode in the form of a tubular metal guiding element surrounds the carrier and protects the vagina and the fetus when the pointed catcher elements are introduced. A cannula may be provided at the electrode device so that liquid medicine or an electrolyte can be supplied to the fetus simultaneously with measuring ECG signals. The electrode device is introduced into the vagina by means of a guiding element.

4 Claims, 9 Drawing Figures

