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(54) **SEIZURE SENSING AND DETECTION USING AN IMPLANTABLE DEVICE**

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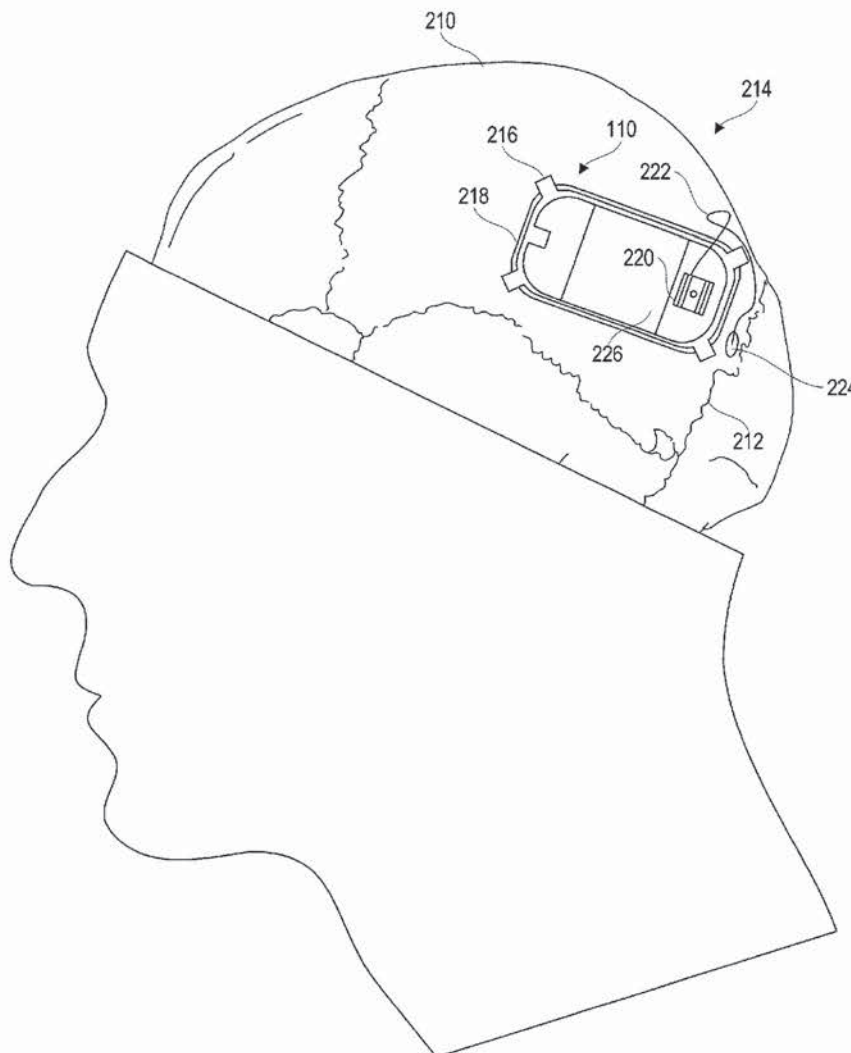
(57) **ABSTRACT**

A system and method for detecting and predicting neurological events with an implantable device uses a relatively low-power central processing unit in connection with signal processing circuitry to identify features (including half waves) and calculate window-based characteristics (including line lengths and areas under the curve of the waveform) in an electrographic signal received from a patient's brain. The features and window-based characteristics are combinable in various ways according to the invention to detect and predict neurological events in real time, enabling responsive action by the implantable device.

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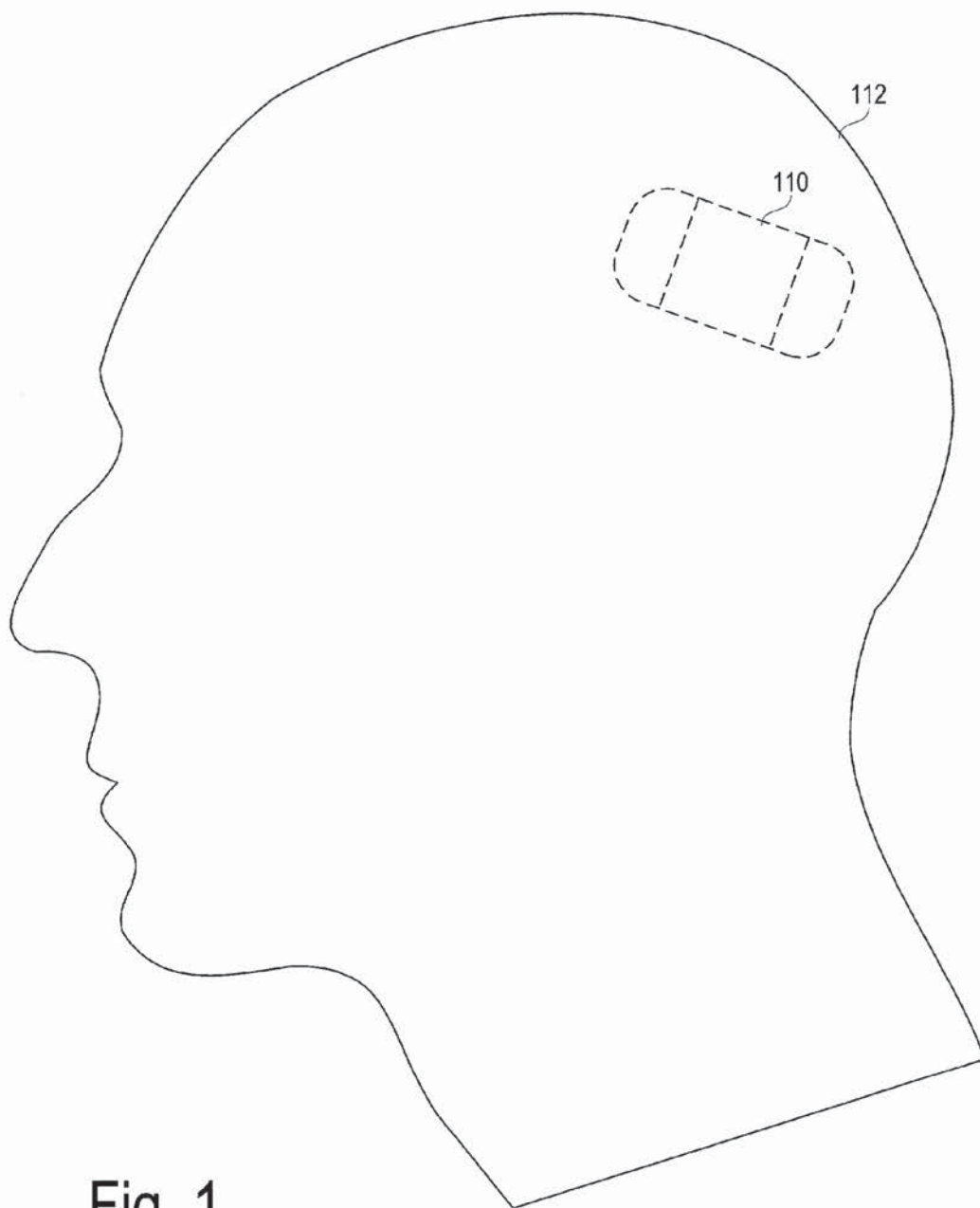


Fig. 1

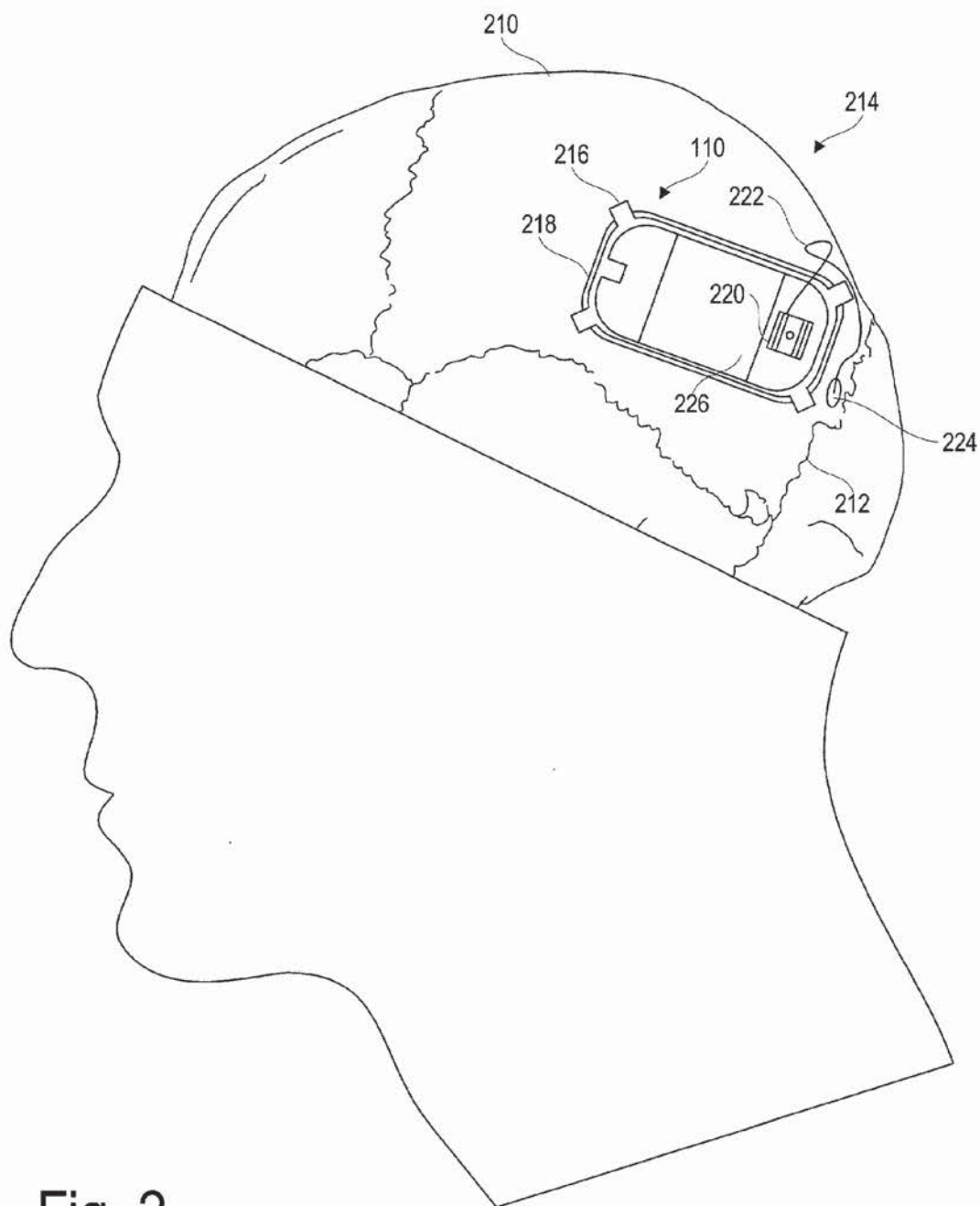


Fig. 2

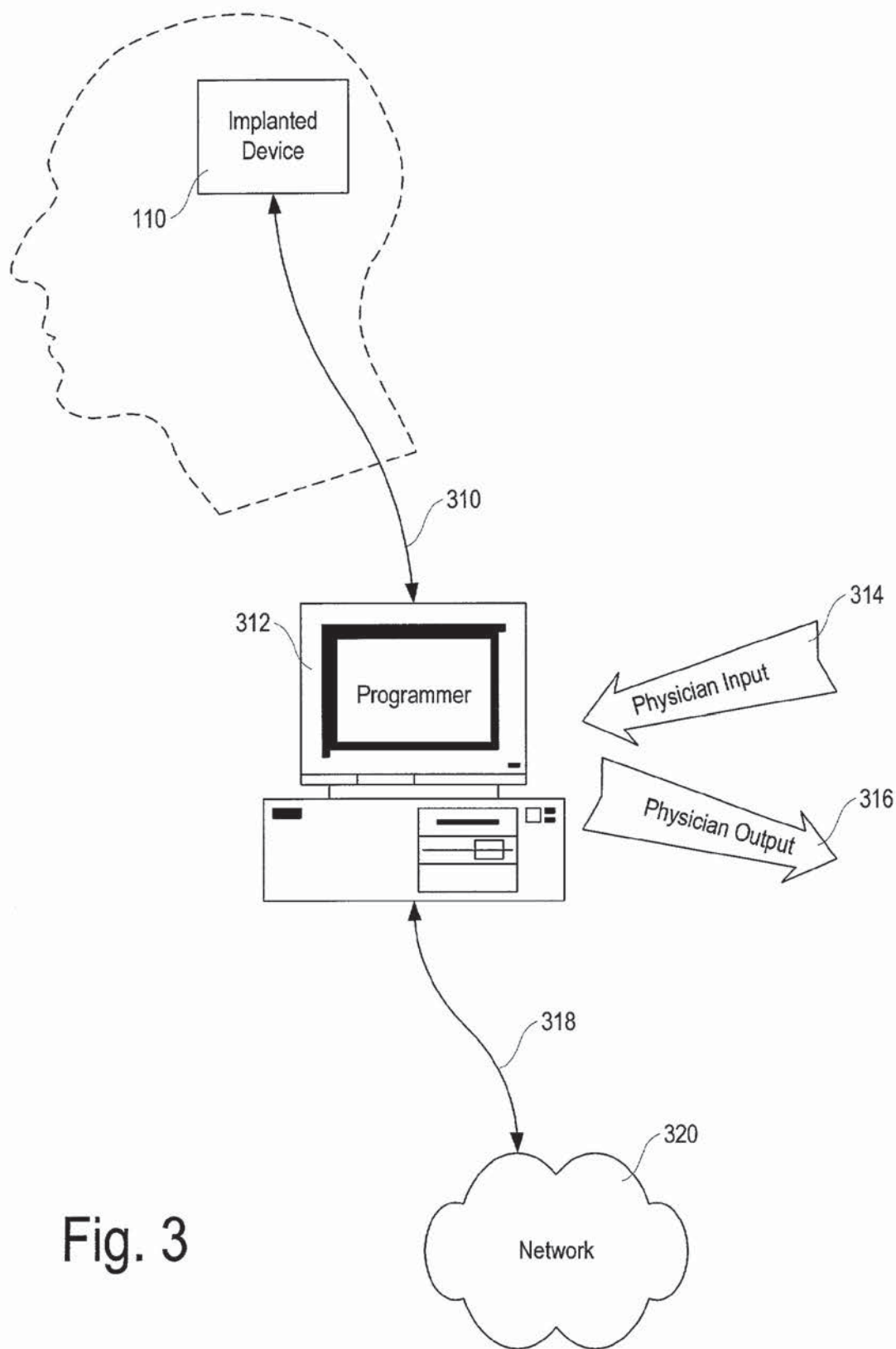


Fig. 3

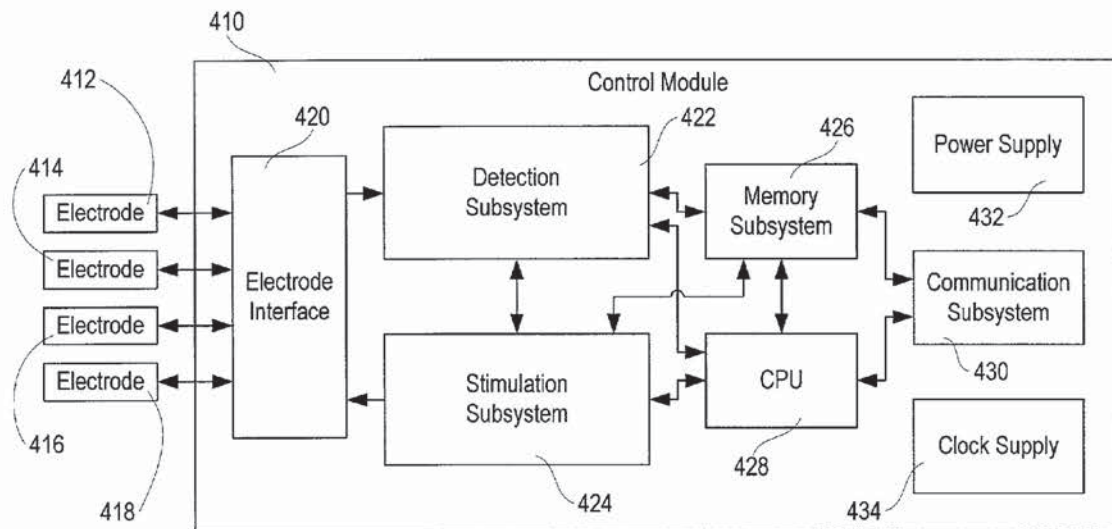


Fig. 4

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